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the magazine of building

DEC 13 '55

ECEMBER 1955

rchitecture in America: Part IV—the corporate client (p. 106) . . . . Theology and the modern church
-a round table report (p. 130) . . . . Fire protective design for multistory buildings (p. 160)



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the magazine of building

DECEMBER 1955

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VOLUME 103, NUMBER 6

Published monthly by TIME Inc.
9 Rockefeller Plaza, New York 20, N.Y.
Entered as second-class matter at New York, N.Y.
subscription price $5.50 a year

Advertisement

From that ancient building substance, wood, an Ohio firm has developed a product which answers America's demand for a truly versatile building material . . .

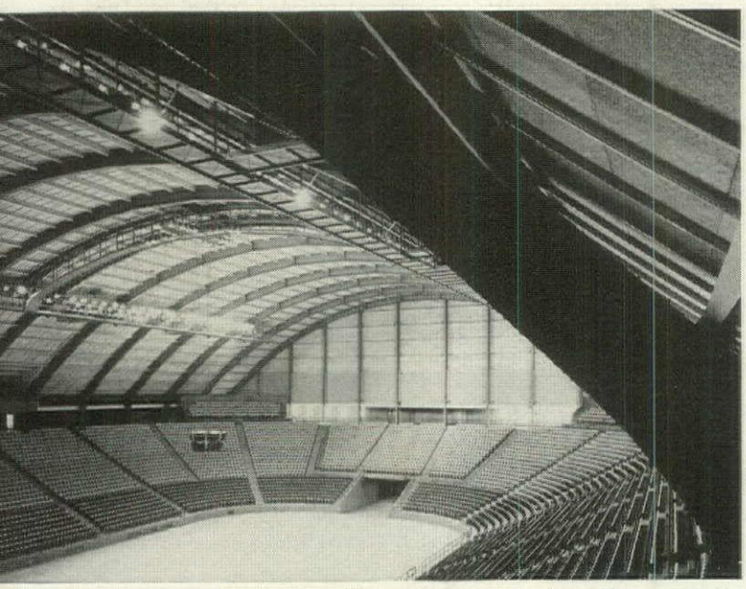
TECTUM: The 20TH century concept

IN THIS ERA of innovation in design and construction, many new uses for building materials have been found to create the simplicity and function of design we demand of our surroundings for work or relaxation. Metals, glass and plastics have each contributed to this modern architectural revolution.

But it is with wood, the ancient building substance, that the major strides have been taken in recent years. A firm in Newark, Ohio, has made one of the major contributions by taking wood fiber and skillfully combining it with a formulated binder. The result . . . Tectum . . . has proved to be the answer to America's demand for a truly versatile building material.

Tectum is more than a product. It is a *method*—the 20th Century Building Concept. Here, in one material, are combined structural, insulative and acoustical values which provide needed functions while lowering costs. Without laminates or special molding, Tectum serves equally well for roof decks, paneling, wall insulation, suspended ceilings and form board.

One of architecture's oldest theories—the exposed ceiling—has enjoyed growing popularity through contemporary design in homes, public buildings, churches and schools. Here, too, the very nature of Tectum is unique in the field: a combination of modern beauty and utility. There is a flair of originality in Tectum's unique texture, created by the random placement of fibers during its manufacture.



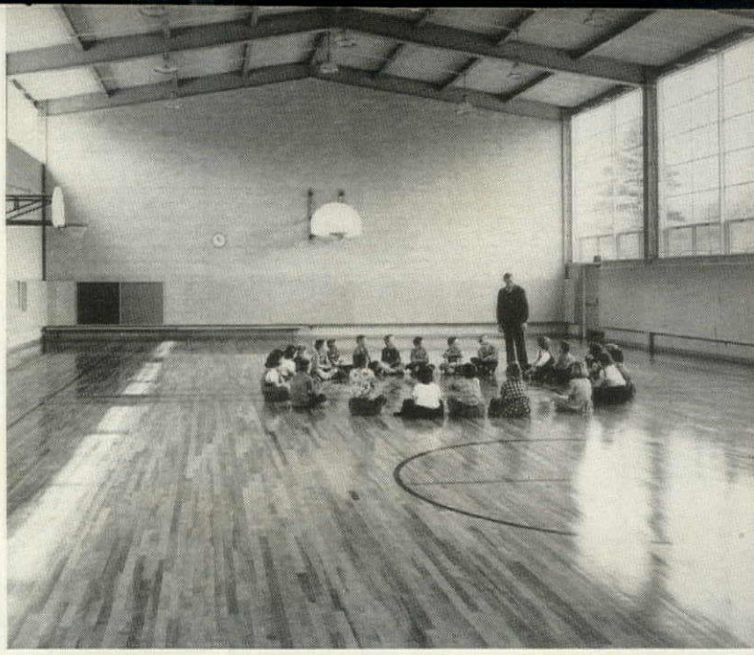
Where good acoustics count, Tectum is on the job. Here, Tectum controls the roar of the crowd in the Student Activities Building at the University of Maryland. Hall, Border and Donaldson of Baltimore were the architects; Baltimore Contractors, Inc., were the general contractors; and erection was by Irvin Prickett & Sons, Inc., Washington, D. C. 106,000 square feet of 2" Tectum plank was applied to nailable steel members.

The hush of worship will be keenly felt at the Gomley Chesed Synagogue, located in Portsmouth, Virginia. Here, Tectum is used as an exposed interior ceiling as well as a roof deck—providing perfect acoustics, insulation and an extremely attractive appearance. Taken before the sanctuary was completed, the photograph below illustrates the excellence of design that can be achieved with Tectum. Architects and Consulting Engineers were Leavitt and Associates, Norfolk, Virginia.





The Country School at Weston, Mass., really went to town! One award was given it by PROGRESSIVE ARCHITECTURE Magazine; another by the Boston Art Festival; and still another, the Parker Medal, was awarded by the Boston Society of Architects.



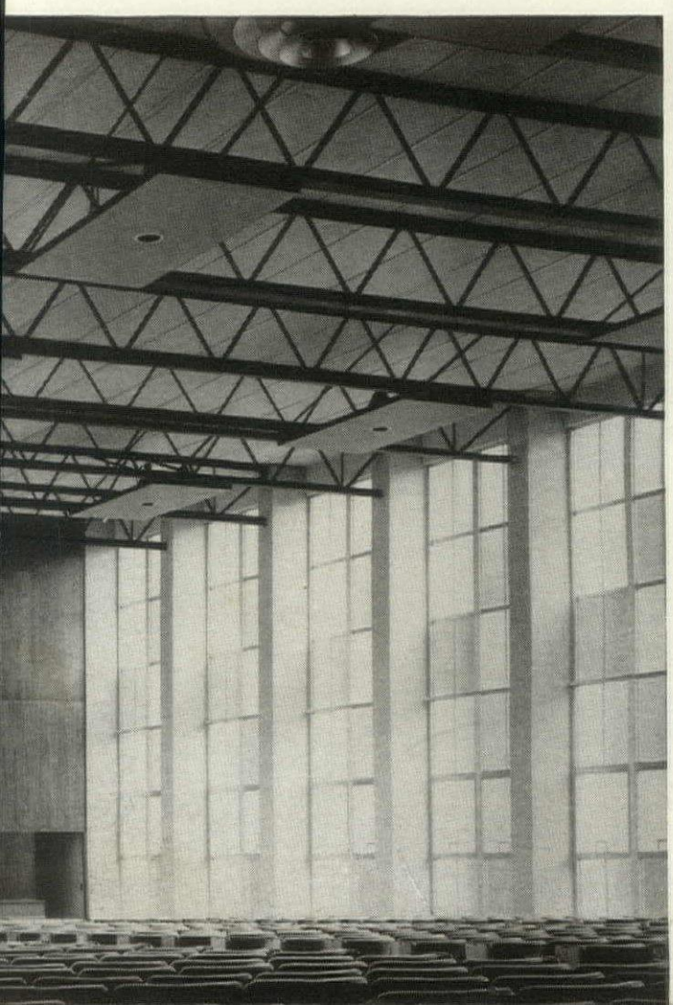
Here is an interior view of the Country School showing the spacious gymnasium. Hugh Stubbins Associates, Cambridge, Mass., were the architects who incorporated Tectum in its unusual design; Singarella Co. was the general contractor.

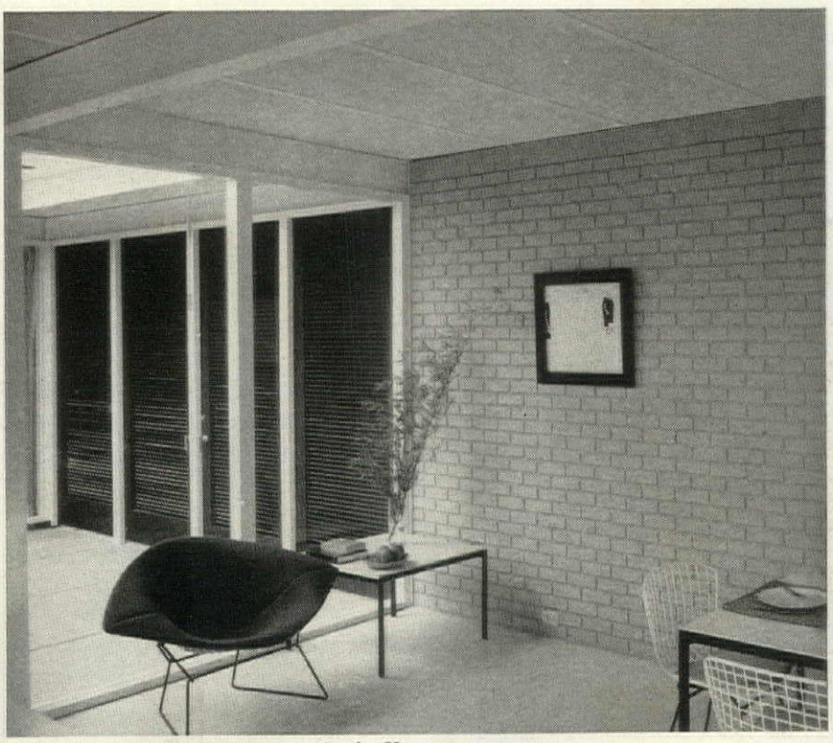
GREATEST VERSATILITY, BROADEST VALUES OF ANY ROOF DECK

Let us examine the basic properties and values of Tectum. As an acoustical material, Tectum affords noise reduction coefficients ranging from .70 for 1¾" material to .85 for 3" material—one of the most efficient on the market. Thermal insulating qualities of Tectum are high because of its cellular structure. Used with built-up roofing, Tectum provides "U" values from .22 to .15, meeting or exceeding normal insulating requirements.

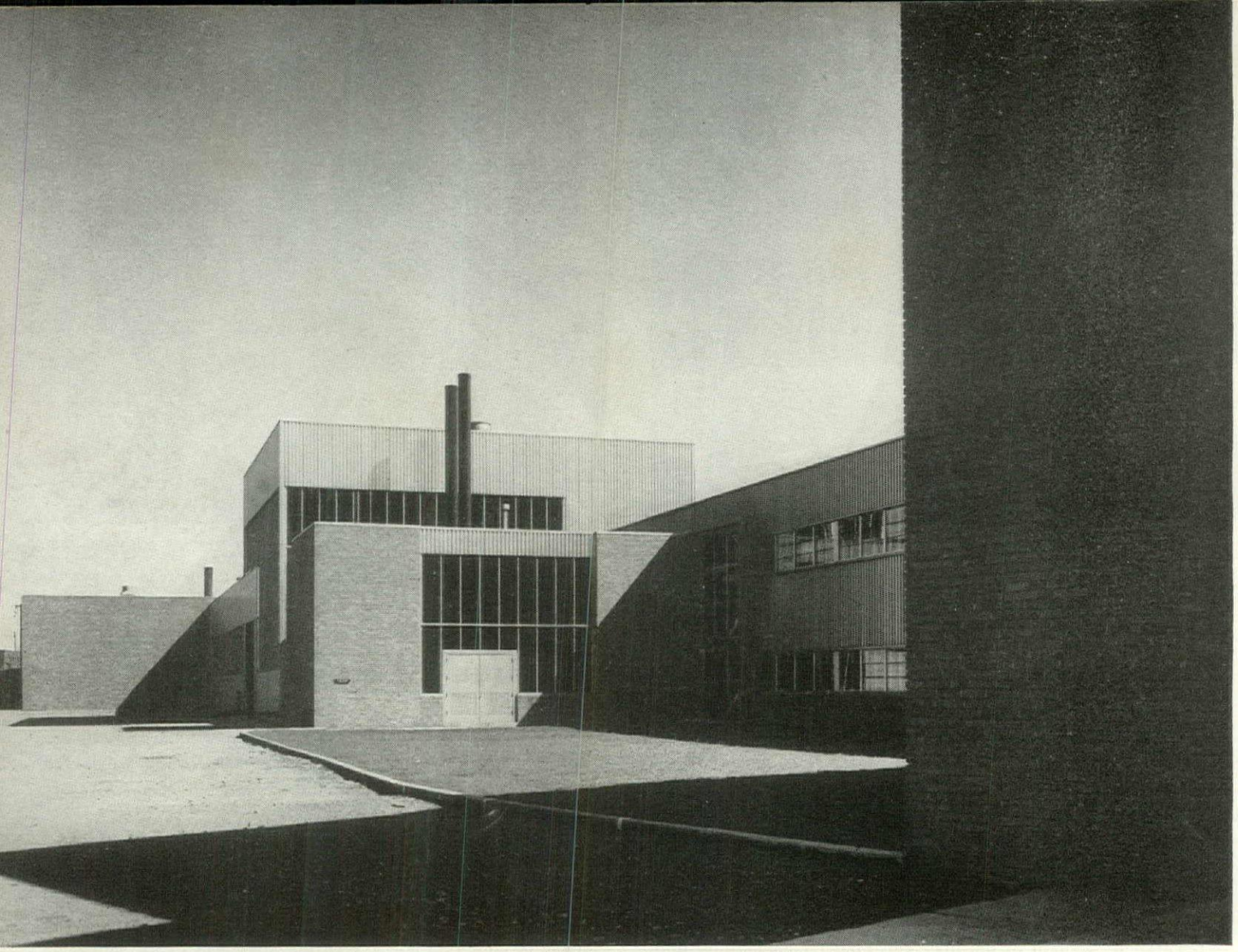
The high load carrying capacity of Tectum results from the remarkable strength of the fiber and binder combination. Both roof plank and tile are designed to carry a uniform load of 200 pounds or more per square foot, on recommended spans. A 1¾" plank or tile will carry a 50 pound per square foot design load on a 32" span with a safety factor of 4. Two-inch plank on 36" spans, 2½" plank on 42" and 3" plank on 48" spans will carry this load with the same safety factor.

Noncombustible Tectum affords low bracket fire insurance premium rates. Tectum has a toxic effect on termites, and is resistant to fungus, even under tropical conditions. When supplied as roof plank or roof tile, Tectum is tongued and grooved on the unsupported edges, assuring alignment of the underside of the deck. Thirteen standard sizes and four thicknesses of Tectum from 1¾" to 3" are available.





One of the most exciting homes in the Houston, Texas, "Parade of Homes" is pictured above. Built by W. K. King and designed by Burdette Keeland, both of Houston, the unusual steel-framed residence is a good example of the arresting effect that can be achieved with Tectum. Furniture by Hans Knoll and Associates.

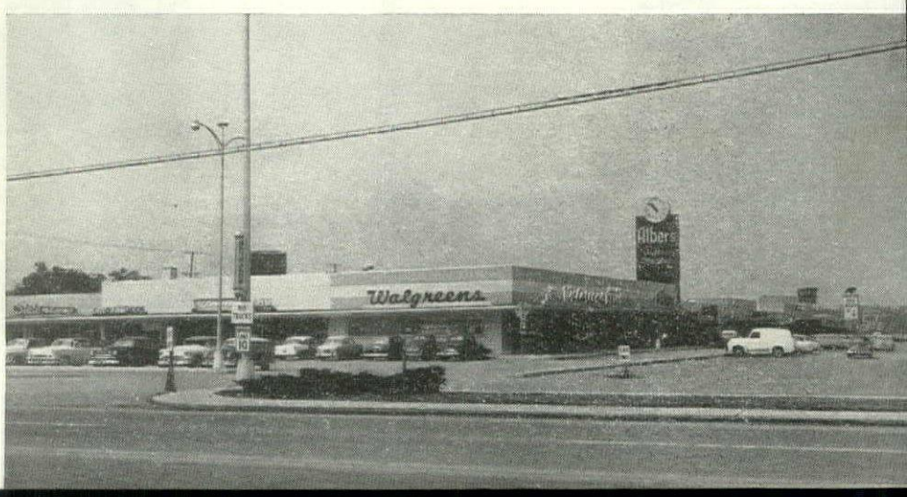


One of the most interesting industrial buildings erected in Cleveland this year is the Technical Center of National Malleable and Steel Castings Co. Modern and completely efficient, Tectum is incorporated in its construction. Architects were Dalton-Dalton Associates and Leonard H. Krill Company was the general contractor.

TECTUM: The ideal roof deck for heavy construction

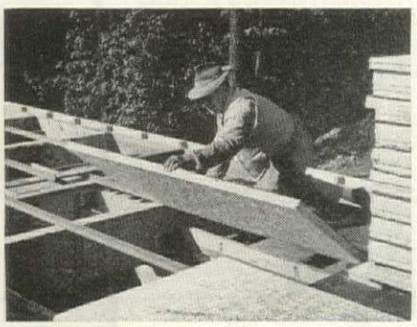
Tectum roof decks are ideal for heavy construction as well. They go down easily and at a faster pace. The Tectum Method saves additional time and money because suspended ceilings are unnecessary for acoustical treatment or finished appearance. The noncombustible feature of Tectum adds protection, minimizes the possibility of disastrous, business-destroying fires. Tectum weighs less per foot than similar materials, reducing the amount of steel framing required to support the roof. These, added to original savings, bring total economies to a substantial amount.

Giant shopping centers, industrial plants and field houses—hundreds of installations in all sections of the country attest to Tectum's contribution. These recent installations are typical: Fairchild Engine and Aircraft plant, Long Island; Miracle Mile Shopping Center, Toledo; Texas Tech Coliseum, Lubbock, Texas; Continental Can container plant, Midland, Mich.; Sears and Roebuck department store, Ft. Lauderdale; Standard Oil Research Building, Baltimore; WSB Television studios, Atlanta; Michigan State Normal College Field House, Ypsilanti.



Here is a section of the Graceland Shoppers Mart, Columbus, Ohio. Covering an area of more than 175,000 square feet, it was developed by the Don M. Casto Organization. This is the 10th Casto shopping center with Tectum roof decking —a total of nearly two million square feet. C. Melvin Frank of Columbus was the architect.









Top left photograph shows how easily Tectum is cut—right on the job and with hand tools. *Top right* photograph illustrates the ease with which Tectum is placed on wood or steel framing.

Lower left, perlite-cement grout fills joints. *Lower right*, unlike poured roofs which must dry before application of built-up roofing, Tectum may have roofing applied as it is laid.

WIDE VARIETY OF INSTALLATION METHODS

Erection of Tectum is fast and easy since it may be carried about by hand and ordinary hand tools can be used to cut or fasten Tectum right on the job. Tectum plank is simply laid across framing and then anchored with clips or nailed to steel or wooden members. Roof tile are supported on the lower flange of bulb-tees spaced 24″ or 32″ apart. After the tile are in place, a perlite-cement grout is poured between the supported ends and around the bulb-tees to fill the joint and anchor the tiles. Tectum is also frequently used in conjunction with precast concrete joists.

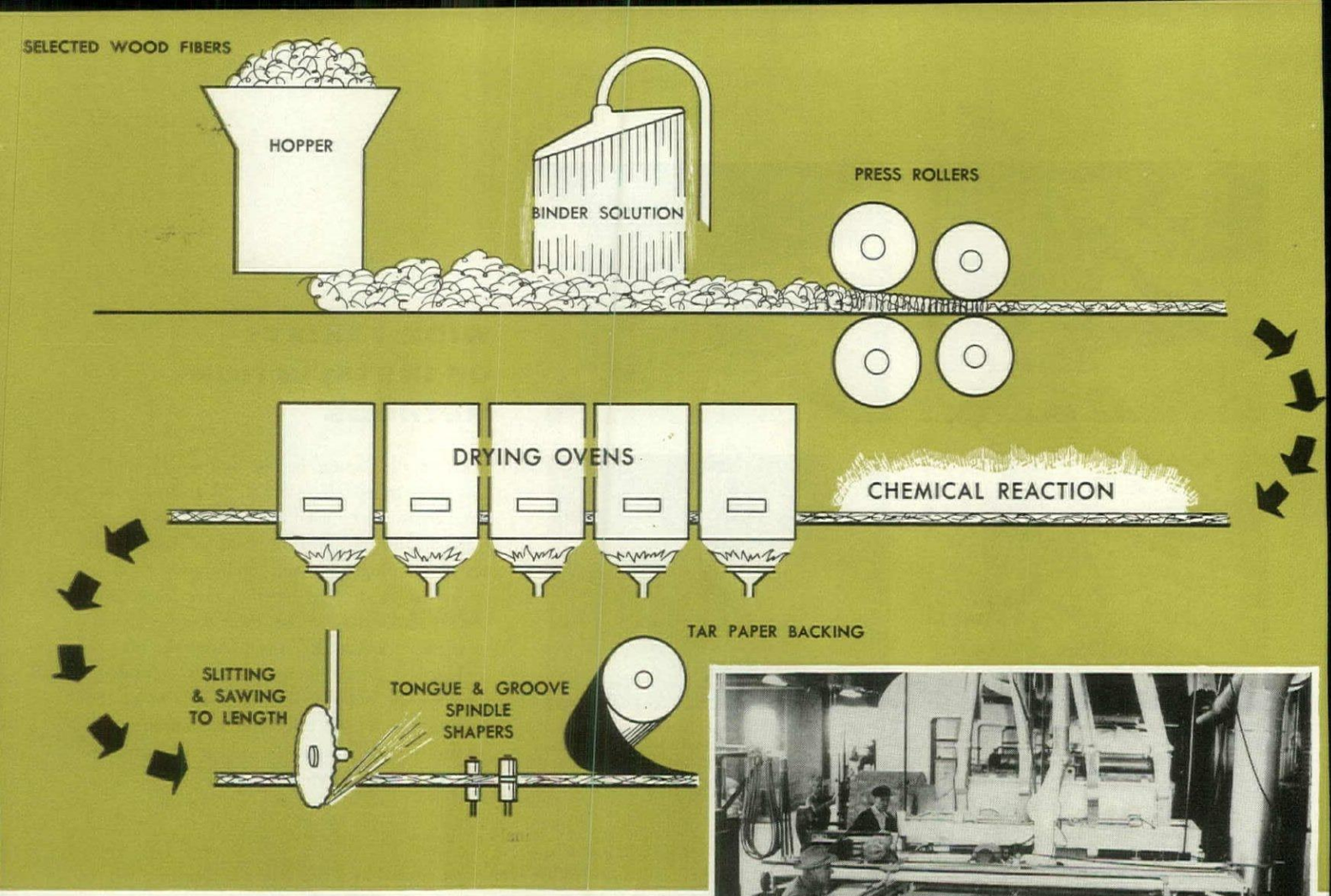
WALL AND CEILING USES AS WELL

Tectum Wall Insulation provides insulation, acoustical treatment and a finished interior surface. It is supplied in a thickness of 2″ in lengths up to 120″ with 30″ widths, and is tongued and grooved on the long dimension. Vertically placed and clipped to steel girts, Tectum wall insulation conceals wall framing. Once installed, little maintenance is required with Tectum—simple vacuum cleaning and painting when required.

Tectum Acoustical Ceiling Panels provide uniform noise reduction, thermal insulation, and a dramatic textured appearance. Supplied in 1″ thickness, Tectum is rigid enough to prevent sagging and heavy enough to stay in place where panels are not secured. Grid systems designed to accept board size acoustical materials may be used for the installation. Easy to install, Tectum Acoustical Ceiling Panels are available in 24″ x 48″ size with a factory-applied felt backing at no additional cost.

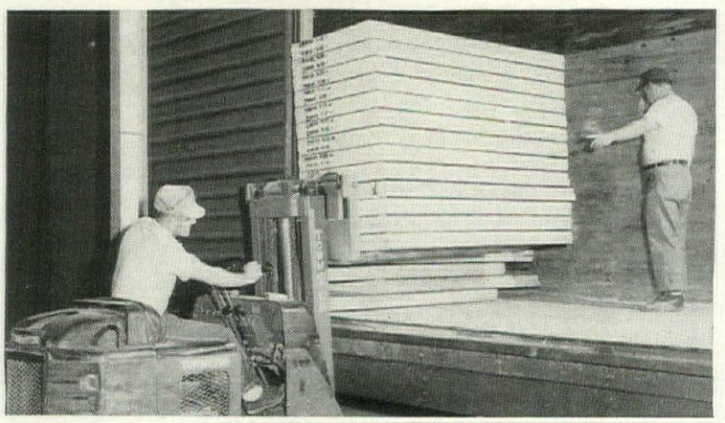


Installation costs are substantially reduced when Tectum Wall Insulation is applied. Easily handled, large areas can be covered in a very short time. High resistance to impact makes Tectum Wall Insulation ideal for industrial installations such as the one shown at the right.



IN PRODUCTION: Straight line automation to loading

Comparable to the "thru" lane of a transcontinental highway, Tectum is manufactured on a continuous, high-speed automatic production line. First, a mat of selected wood fibers is laid on a conveyor belt eight feet wide. Then, each fiber is impregnated and coated with a chemically-stable, inorganic, water-insoluble binder. The mat, passing through calender rolls, is compressed to the desired thickness. Next, a chemical reaction in the binder causes a permanent "set". The continuous Tectum board then moves through drying ovens and, upon emerging, passes through a series of slitting and cut-off saws—cutting it to specified lengths and widths. Final steps are forming of the tongue and groove and application of a felt backing.



Upper photo shows Tectum after it has rolled through the drying ovens. Complete fabrication requires less than one hour. As a result, as shown in the *lower photograph*, a railroad car can be loaded with Tectum as it comes off the line—making it available for delivery when needed.

WRITE ***or call for the name of your local Tectum distributor and other helpful information. Get the full Tectum story today.***



Tectum Division
Peoples Research and Manufacturing Co.
300 South Sixth Street • Newark, Ohio

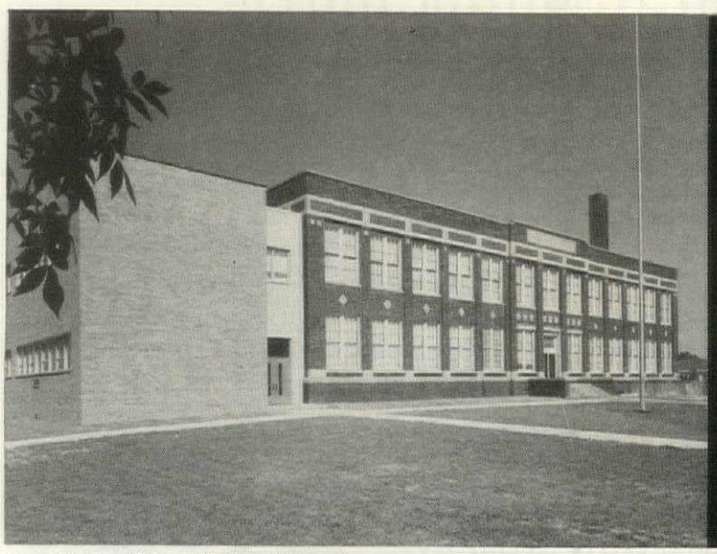
KEWANEE reserve plus rated boilers



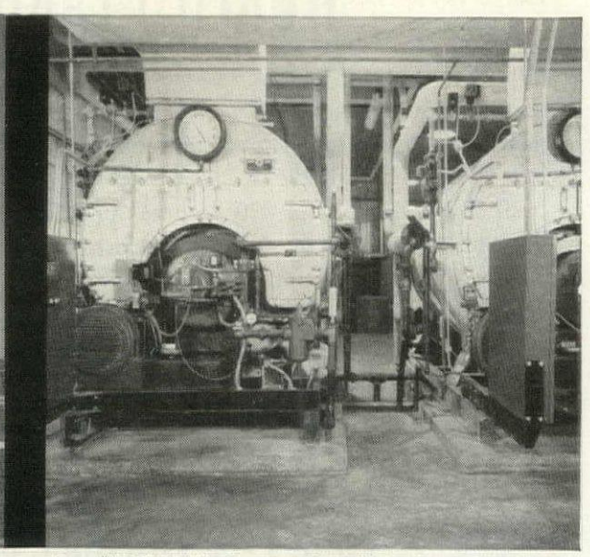
THEY LOOKED INTO THE FUTURE WHEN SELECTING KEWANEE BOILERS

meet expansion plans of schools . . .

When boilers are selected for schools today, administrators must look well into tomorrow. For the accelerated rate of school enrollment means intelligent planning must consider future heating needs as well as present. That's the way the problem was viewed at James Madison School, Virginia, Minnesota—and that's why Kewanee Reserve Plus Rated Boilers were chosen. Since Kewanee Boilers provide 50% reserve built-in power, the problem of expansion was met . . . no need to buy additional boilers in the near future. Kewanee Boilers provide sufficient power to take care of fluctuating loads . . . can be depended upon in emergencies. They are rated on nominal capacity . . . operate at "cruising speed," which means lower fuel costs, lower maintenance, greater efficiency, longer boiler life. Boilers rated on maximum capacity have no reserve to meet the future needs of an expanding school system. So select Kewanee Boilers with built-in "reserve." They can be depended upon if emergency comes today and when expansion comes tomorrow.



James Madison School, Virginia, Minnesota
Architect: Damberg & Damberg, Virginia, Minnesota
Engineer: Foster Consulting Engineers, Duluth, Minnesota
Heating Contractor: Sher Plumbing and Heating, Duluth, Minnesota



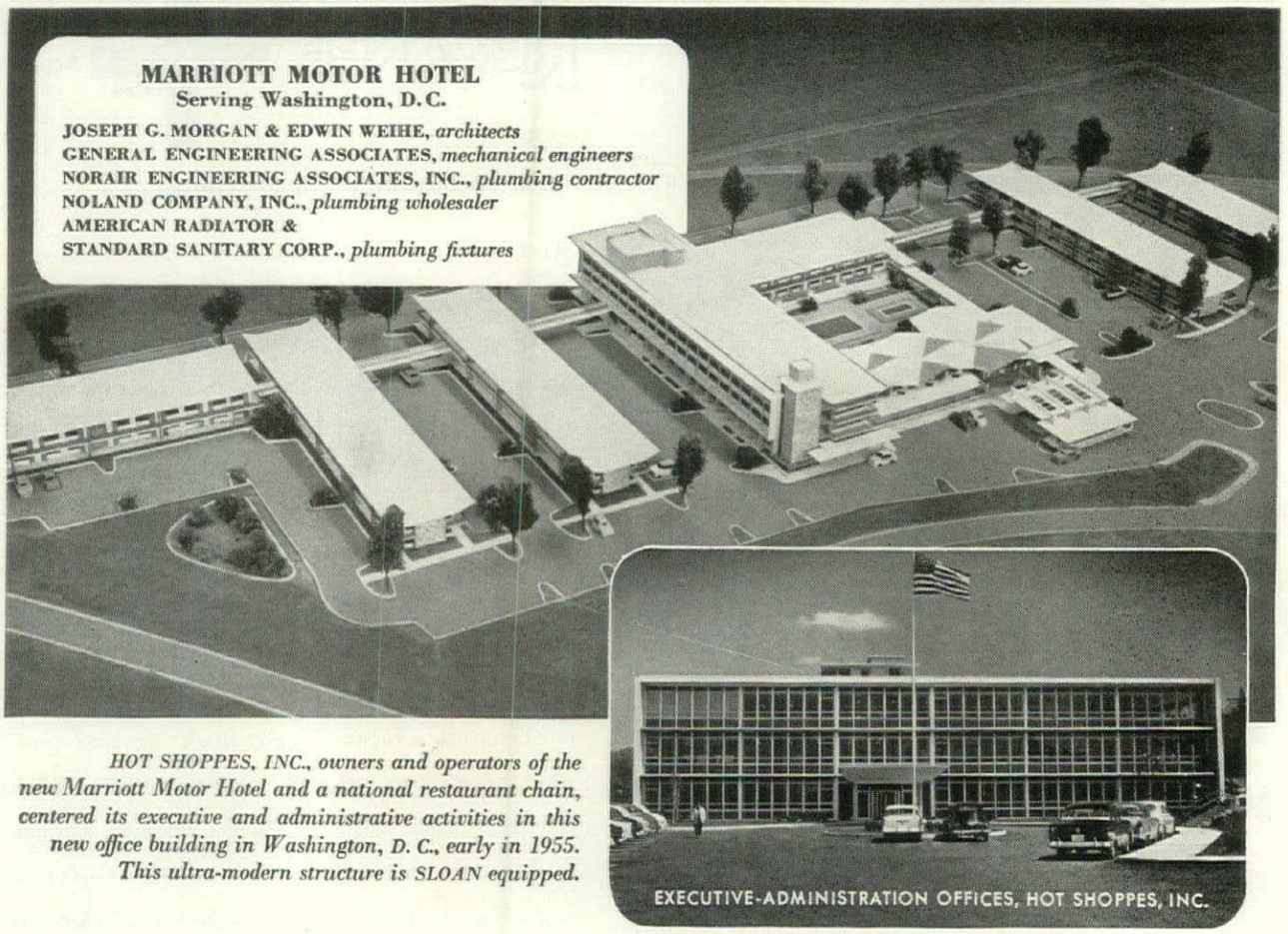
Two #KP-82-5 15 lb. Kewanee-Petro Boiler-Burner Units for oil firing used in the James Madison School

KEWANEE-ROSS CORPORATION, Kewanee, Illinois
Division of American Radiator & Standard Sanitary Corporation

KEWANEE ROSS

Serving home + industry American-Standard • American Blower • Church Seats & Wall Tile • Detroit Controls • Kewanee Boilers • Ross Exchangers • Sunbeam Air Conditioners

THE VAST MAJORITY OF THE NATION'S FINE BUILDINGS ARE SLOAN EQUIPPED



HOT SHOPPES, INC., owners and operators of the new Marriott Motor Hotel and a national restaurant chain, centered its executive and administrative activities in this new office building in Washington, D. C., early in 1955. This ultra-modern structure is SLOAN equipped.

EXECUTIVE-ADMINISTRATION OFFICES, HOT SHOPPES, INC.

WORLD'S LARGEST MOTOR HOTEL

Midway between the nation's Capitol and the Pentagon there's great excitement. Soon the new 4-million dollar MARRIOTT MOTOR HOTEL will open its doors to travelers. Eight main buildings, all connected by covered walkways, will contain 370 de luxe, air conditioned and sound proofed guest rooms, each with dressing alcove and combination tub and shower bath. All showers equipped with Sloan Act-O-Matic Shower Heads (See below.) Patrons may register at a drive-in booth without stepping out of cars, and be escorted to accommodations by bicycle-riding escorts. Convenient parking space for 450 cars will be available. In a centralized location guests will enjoy a 40′ x 60′ swimming pool—a wading pool and playground for children. An excellent restaurant, gift and convenience shop, hospitality desk, barber shop, automatic laundry, and car servicing station will cater to traveler needs. Throughout the MARRIOTT, as in thousands of other fine buildings, will be SLOAN *Flush* VALVES, famous everywhere for efficiency, durability and economy.



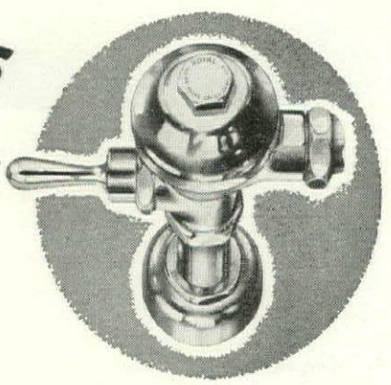
SLOAN *Flush* VALVES

FAMOUS FOR EFFICIENCY, DURABILITY, ECONOMY

SLOAN VALVE COMPANY • CHICAGO • ILLINOIS

Another achievement in efficiency, endurance and economy is the SLOAN *Act-O-Matic* SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. Architects specify, and Wholesalers and Master Plumbers recommend the *Act-O-Matic*—the better shower head for better bathing.

Write for completely descriptive folder



Outlook for '56: biggest building volume ever, ample funds for financing

As 1956 drew near, construction faced its brightest year ever.

Led by the top private industrial and commercial executives comprising the select Business Advisory Council to the Secretary of Commerce, business and government leaders everywhere were predicting that economic activity in 1956 would top almost all of this year's records.

In the most pointed forecast for building, the Commerce and Labor Depts. estimated that 1956 construction expenditures would advance 5% to a new peak of $44 billion (see table below).

By and large, this government projection was generally comparable to FORUM's forecast by Consultant-Economist Miles L. Colean published three months ago (AF, Sept. '55). On total outlays the two were only a $100 million shade apart ($44.0 billion vs. $44.1 billion). The government experts saw private outlays running a scant $150 million behind FORUM's $31 billion forecast, public expenditures reaching $13.15 billion, compared with the magazine's $13.10 billion estimate. Except for a $500 million higher estimate for military facilities, possibly based on much later and more official Pentagon contacts, the government forecast for all public expenditures would have been $450 million lower, rather than $50 million higher than FORUM's.

Larger business spending. In private construction, the government's forecasts were more optimistic than FORUM's for industrial and commercial building by $200 million and $175 million, respectively. Although the official forecasters still anticipated gains as high as 15% in 1956 outlays for private educational, hospital, social and recreational and religious building, in these categories they expected spending to trail FORUM's forecasts by $25 million to $50 million each.

Cost assumptions. To put their 1956 forecasts in a proper frame of reference, the Commerce and Labor officials in an accompanying statement said their figures were "based on the assumption of a moderate increase in over-all economic activity . . . also reflect the tremendous volume of construction now in progress, much of which will be carried over into the new year."

"Construction costs," they added, "are expected to continue to rise moderately. Increased plant capacity and rising productivity will prevent all but minor or spot material shortages."

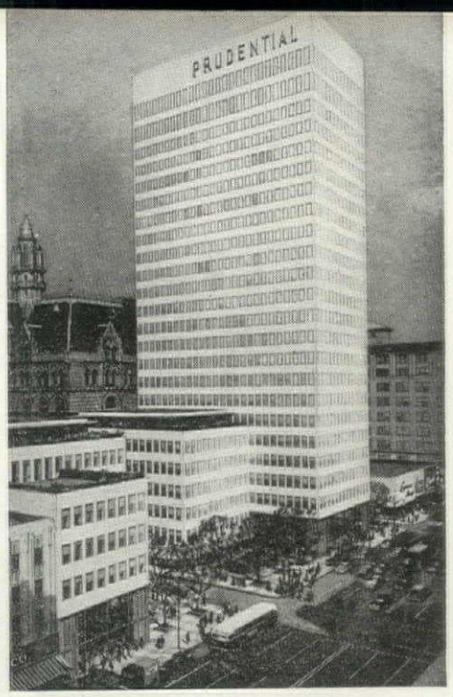
Credit easing foreseen. With the exception of some homebuilders, most of the business and banking world also was assuming there would soon be easier credit to facilitate the adequate financing of the new year's boom business, subject only to sufficient restraints to prevent undue inflationary effects. HHFAdministrator Albert M. Cole was busily delivering addresses to homebuilding and mortgage groups to assure them the administration's goal was at least 1,200,000 housing starts next year.

Said Cole at MBA's national convention in Los Angeles: "I can assure you HHFA is keeping the closest kind of watch on the situation. We shall continue to be guided by the conditions of the course. The hands that tightened the rein will not hesitate to loosen it when conditions so recommend."

Office, apartment slackening. About the only two discordant notes that could be heard over the din of the boom:

▸ The semi-annual, Oct. 1, office occupancy survey by NABOM showed a national vacancy rate of 3.44%, compared with 3.24% on May 1, and 2.89% in Oct. '54. Cities where vacancy rates declined since May: New York, from 1.89 to 1.24%; Chicago, from 3.75 to 3.68%; Boston, from 4.95 to 4.52%; Denver, from 10.92 to 8.86%. Cities where the rate increased: Philadelphia, from 5.63 to 8.22%; Kansas City, from 4.51 to 5.03%; Detroit, from 7.14 to 8.76%; San Francisco, from 3.11 to 4.39%; Los Angeles, from 3.66 to 4.94%.

▸ Tabulation of a special Census Bureau survey in May of apartment projects of 100 units or more (except public housing) in 230 areas indicated an average national vacancy rate of 4% in such structures or projects. Unrented apartments in this category ranged from 1% in the New York metropolitan area to 12.5% in the Dallas area. Rates for other cities: Los Angeles, 7.1%; Washington, D.C., 3.5%; Norfolk-Portsmouth, Va. area, 11.6%.



Prudential's building urge includes Newark home office

Prudential Insurance Co., which has built large regional headquarters in Chicago, Minneapolis, Los Angeles, Jacksonville and Houston in what has probably been the biggest owner-occupancy office construction program of any US business organization since World War II, is going to do some major modernizing in its own home town. Last month the $12 billion firm announced plans for a $20 million "redevelopment" office building cluster in Newark, N.J. (see cut). Main element of the project will be a 24-story, marbled office structure. This will be flanked in Rockefeller Center style by terraced seven-story wings and garden plazas. In an adjoining block will be another seven-story building. The project, designed by Voorhees, Walker, Smith & Smith, will require the demolition of the massive, nineteenth-century masonry buildings, modeled after two French castles, that are now company headquarters.

Type of construction	1955 Forum	1955 Commerce-labor	1956 Forum	1956 Commerce-labor
		(in millions of dollars)		
PRIVATE				
Nonresidential building (nonfarm)*	7,285	7,630	8,400	8,700
Industrial	2,200	2,400	2,600	2,800
Commercial	2,875	3,045	3,300	3,475
Warehouses, office and loft buildings	1,075	1,125	1,150	1,225
Stores, restaurants and garages	1,800	1,920	2,150	2,250
Religious	750	740	900	850
Educational	500	500	550	525
Social and recreational	265	245	300	275
Hospital and institutional	370	350	400	350
Residential (nonfarm)	16,125	16,345	16,400	16,200
Public utilities	4,500	4,465	4,700	4,450
*** PRIVATE TOTAL**	**29,485**	**30,000**	**31,000**	**30,850**
PUBLIC				
Nonresidential*	4,490	4,220	4,500	4,225
Industrial	870	705	600	475
Educational	2,550	2,450	2,800	2,700
Hospital and institutional	310	330	300	275
Residential	250	250	300	275
Military facilities	1,150	1,320	1,000	1,500
Highways	4,200	4,100	4,800	4,600
Sewer and water	1,100	1,080	1,300	1,200
*** PUBLIC TOTAL**	**12,315**	**12,000**	**13,100**	**13,150**
*** GRAND TOTAL**	**41,800**	**42,000**	**44,100**	**44,000**

** Minor components not shown, so total exceeds sum of parts.*

NEWS *continued on p. 12*



INSTALLATION: Sun Oil Company District Accounting Office, Dayton, Ohio

PROJECT ENGINEER: Alex M. Engart

ELECTRICAL CONTRACTOR: Helldoerfer-Castellini, Dayton, Ohio

FIXTURES: Litecontrol #5524, 2 lamp slimline recessed troffers, using Holophane low brightness lenses, #9033 and #9034

CEILING HEIGHT: 10′ 0″

SPACING: 8′ 0″

FINISHES: Walls, light green — Ceiling, light grey — Floors, light to medium — Desk Tops, medium grey

INTENSITIES: 40 Footcandles in service (intensity figures courtesy Lighting Sales Dept., Dayton Power & Light Co., Dayton, Ohio)

Sun Oil gets More "Mileage" in Lighting – by **LITECONTROL**

Sun Oil won't have to change its lighting fixtures every 1000 "miles"! This installation uses the very popular Litecontrol #5524 lens which not only does an excellent job *now* but permits the addition of fixtures in the future to make continuous rows, if desired. Note the neat fit of the fixtures in the ceiling and the smartly modern but business-like appearance.

This installation is a repeat performance by Litecontrol for Sun Oil — this time in their new office. It pays to stick with a good brand particularly when experienced counsel in lighting is so helpful and handy. For good light for better vision at standard fixture costs . . . consult *your* Litecontrol Representative.

LITECONTROL *Fixtures*

KEEP UPKEEP DOWN

LITECONTROL CORPORATION, 36 Pleasant Street, Watertown 72, Massachusetts

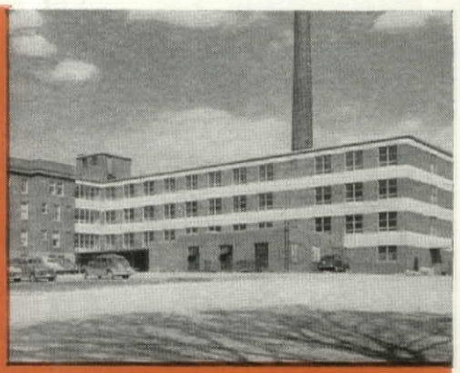
DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALERS



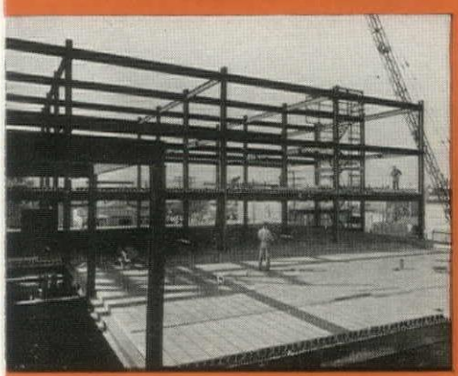
1. FACTORY addition ahead 30 days.



2. CHURCH floor placed in 2 days.



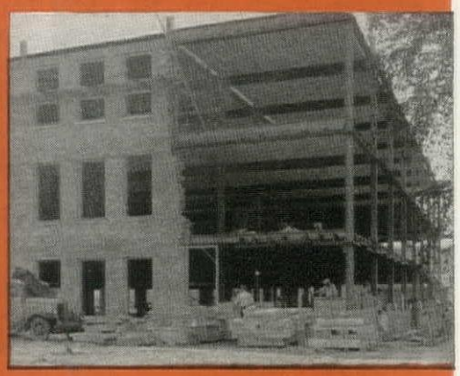
3. HOSPITAL saves almost 2 months.



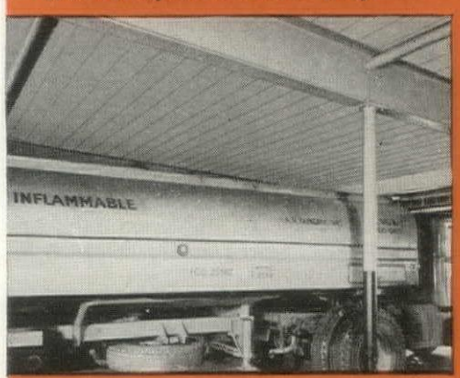
4. HOTEL opens 2 months early.



5. APARTMENT rents 2 months sooner.



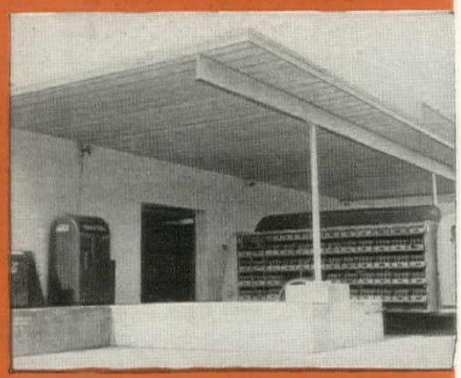
6. OFFICE building saves 30 days.



7. GARAGE roof takes 12 hours.



8. SCHOOL ready 1 month earlier.



9. PLANT speeds construction 25%.

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Realtors' convention

Five thousand realtors gathered in New York last month for the 48th annual convention of the National Assn. of Real Estate Boards. In five days of busy, serious five-ring sessions they discussed scores of realty and building situations, although most centered on these five main points:

- Business and real estate outlook. By and large there was mostly radiant optimism on this topic—only a few scattered notes of concern.

- Central city vs. suburban area tugging and pulling. Usually the city was acclaimed as still the reigning champ.

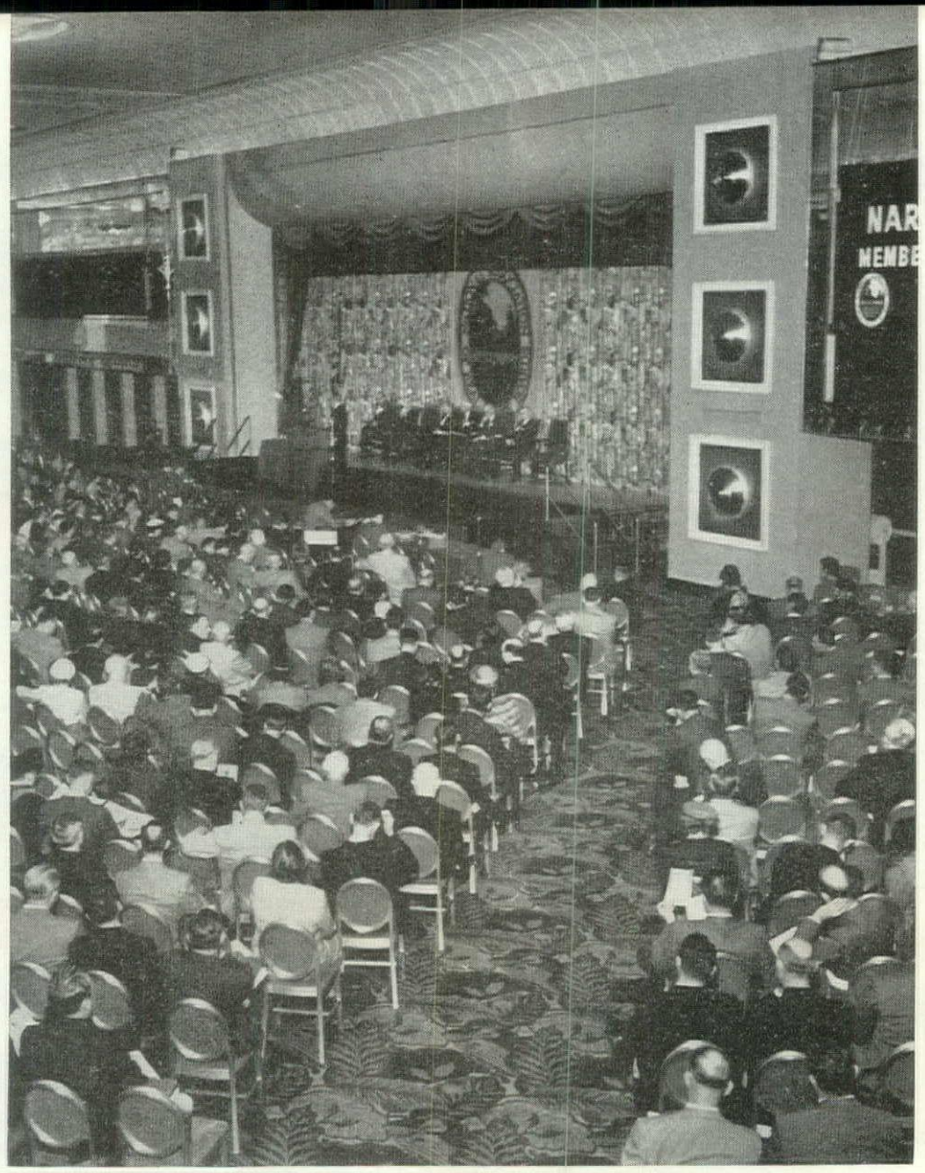
- Politics and taxes. Besides the customary attacks on public housing, there was a report on political intervention by the Republican National Committee in the GSA surplus federal realty disposal program. Greater US realty "tax" payments to local communities also were forecast, and resolutions passed for more tax help for home ownership and urban renewal.

- Dues increase. The long-pending $5-a-member national dues boost was finally made effective, giving the association a 50% increase in income of about $275,000.

- Revised code of ethics. In a complete overhaul of this document the convention entirely eliminated the article on recommended brokerage fees, once the basis of antitrust suits that required several years of effort and expense before dismissal.

Continuing prosperity. At a press conference, President Henry G. Waltemade echoed the reports of most delegates on the business outlook in general, and real estate in particular. "Everyone feels very good," he declared. "Things are looking up; 1956 will be as good or better than 1955. We are living in a 'political economy,' so building will be helped; credit will open up again after Jan 1."

At a mortgage council session, Economist-Consultant Miles L. Colean confirmed Waltemade's opinion that ample money will be available for a huge volume of business



GENERAL SESSIONS FILLED HOTEL COMMODORE BALLROOM WITH ATTENTIVE REALTORS

Photos: Walter Daran; Drucker-Hilbert; Standard Flashlight



POST ELECTION PORTRAIT of 1955 President Henry G. Waltemade of the Bronx and his wife, Jeannette (r) with President-Elect Clarence M. Turley of St. Louis and his wife Ruth.



MORTGAGE OUTLOOK panel moderated by Mortgage Council President Oliver M. Walker (l) heard Economist-Consultant Miles L. Colean (r) predict ample financing for 1956.



WILLIAM ZECKENDORF (center) just before addressing Brokers Institute session swapped stories with institute Governor Clinton B. Snyder (l) and President Louis S. Laronge.

finds business good; city still champ over suburbs

next year. Said Colean: "Irrespective of future monetary policy, the mortgage market is certain to have at least as large a volume of funds at its disposal in 1956 as in 1955, and the prospect is that it will be greater."

New York, New Haven & Hartford Railroad President Patrick B. McGinnis told a Society of Industrial Realtors lunch that New England farmlands are being beaten into industrial sites so fast "there won't be an acre of pastureland left for sale in five or ten years. The days of locating industries in the heart of big cities and towns are gone." Holding options on six New England sites, he had only one complaint: farmers now demand industrial-site instead of acreage prices for their land.

Causes for concern. At a Brokers Institute press conference two situations that would bear watching were brought out.

Institute President Louis S. Laronge of Cleveland said new modern shopping centers are beginning to exert unfavorable effects on many old style neighborhood "corner stores" and on peripheral retail stores in many downtown shopping areas.

Commenting on a Census Bureau report of a 4% average vacancy in apartment projects of 100 or more units (p. 9), former institute President W. Max Moore of Denver agreed there was "cause for concern" in cities with rates comparable to the 12.5% reported for Dallas. In Denver, he said, he had noticed a "definite trend" of young people moving out of $100-a-month range apartments into the suburbs without very rapid rerenting of the units they vacated.

Did the suburbs goof? Most central cities are being handed a second chance at salvation from the threat of decentralization, said Economics Professor Herbert B. Dorau of New York University at an Appraisal Institute general session. "Suburbia fumbled the ball and those who were responsible to have the promised land in order and organized to receive the flight from the impossible city completely defaulted on their responsibilities. The exodus may have been unplanned but so was the reception in Suburbia. With only occasional exceptions . . . the suburban area is an indescribable mess . . . . The central city has been handed a second chance, which I don't mean to say it deserved, but simply on the basis of the colossal default on the part of the peripheral areas."

Dorau noted that if any city was not economical it would not survive without subsidy. In some instances subsidy might be justified, he added, in other cases it might be a mistake. "I would recognize the subsidy aid that might well go into the establishment of competitive central city shopping centers which would again lure back suburban purchasing power even if not the suburbanite as a resident," said Dorau. "And if we had given a fraction of the subsidy to mass transportation that we have given to automobile transportation, there would be hardly any central city problem today."

Endless suburbs deplored. New York realty developer William Zeckendorf attracted the largest single audience of the convention. He warmed every realtor's heart when he began his address by pointing out that the earth's surface is finite, its population increases at a constantly faster pace, and thus the real estate man operates in a field that assures him "a perpetual bull market."

After explaining why city land values have not increased in dollar value since the 20's in the same proportion as other goods or commodities, despite both inflation and bull market conditions, he urged large scale rebuilding of central cities to save the population from being suffocated by endless "suburban sprawl."

Zeckendorf deplored conditions around cities like Los Angeles, where it is "impossible to get into a car and drive out of town for the evening," and there is only "an endless succession of community after community, with no change of pace."

His remedy: the creation of "green belt" reserves within a short drive of all cities, the greater verticalization of redeveloped cities, so they will be able to accommodate more of the swelling population—perhaps a new city planning and zoning commandment, "Thou shalt not build lower than," instead of the present low-density rule, "Thou shalt not build higher than."

Surplus US property sales. By resolution, NAREB urged Congress "to extend the authority of the General Services Administration to dispose of surplus real estate by negotiated sales as well as by advertised bids," and offered help to develop a program for the orderly disposal of such property with proper safeguards to protect the public interest. The report of the Realtors' Washington Committee explained how the exclusive listing program for sales through regular real estate brokers, authorized by Congress in 1954, had gone awry: "A House subcommittee made it pointedly clear to GSA that any exclusive contract . . . would be closely scrutinized and investigated. The first broker was visited by a subcommittee investigator. . . . Then the Republican National Committee entered the picture requiring political clearance of any broker or appraiser considered for an exclusive contract." Result: GSA gave up after putting only two properties into outside brokers' hands, neither of which was sold.

Support for urban renewal. In voting to increase national dues, the nation's 56,000 realtors also provided the funds needed to expand their Build America Better conservation and urban rehabilitation program into NAREB's major operation next year. After the new dues take effect Jan. 1, perhaps $150,000 will be allocated to the Build America Better Council, reported new Executive Vice President Eugene P. Conser. Last year the council operated on only a $10,000 budget, this year about $25,000.

Conser also issued an explanation for omitting the former fees article from the association's completely overhauled code of ethics, which had been reworded after the government's unsuccessful antitrust suits

continued on p. 16

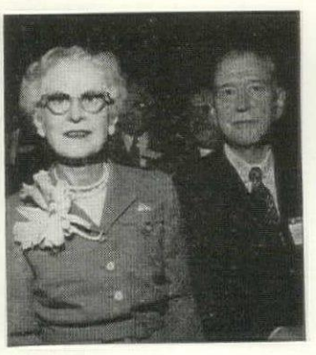
INDUSTRIALIST OF THE YEAR award of the SIR was presented to General Dynamics Corp. President John Jay Hopkins (r) by Gen. Matthew (Ridgway (l), SIR President Lester Steele.





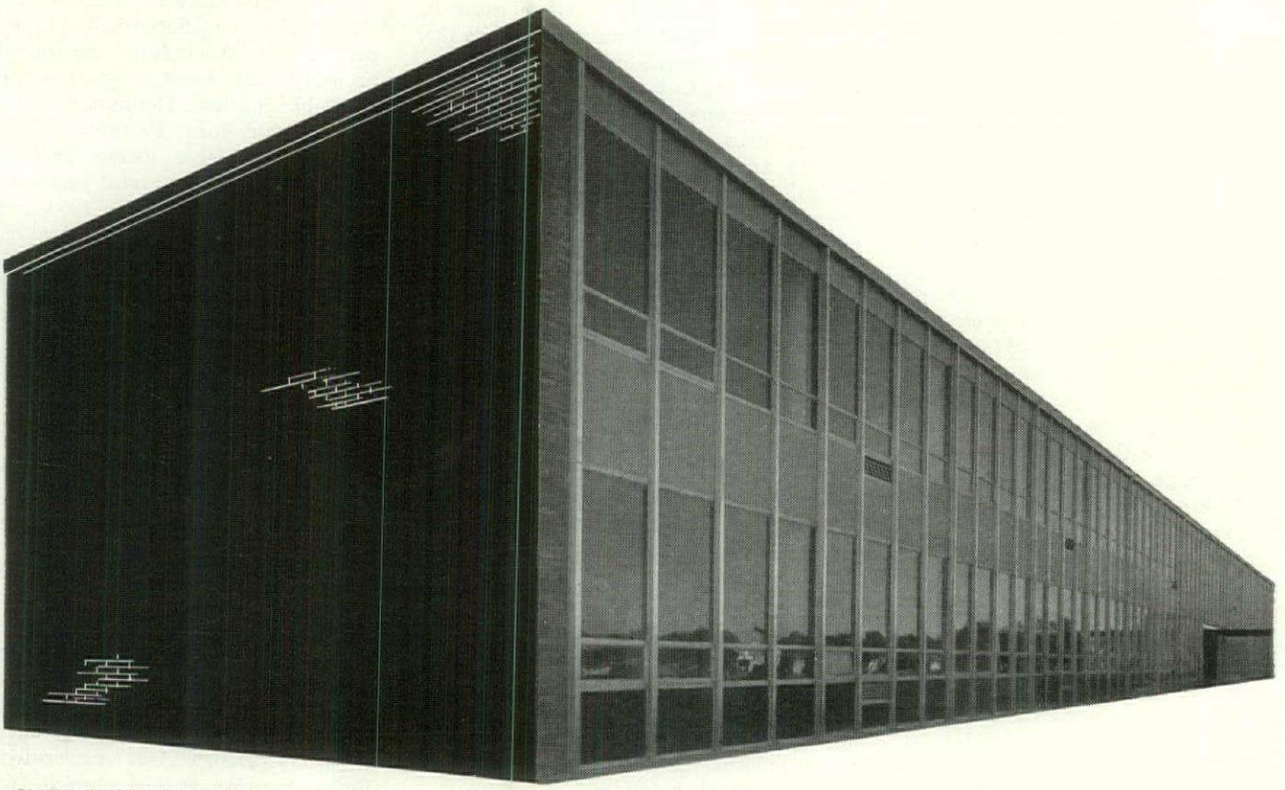
COUNSELORS SOCIETY increased membership to exactly 100, heard talks by James C. Downs Jr. (l), President Roland Rodrock Randall (standing), Dr. Bernard B. Goldner (next r).

HERB NELSON and his wife after receiving $15,000 retirement gift check for 33 years as NAREB Executive Vice Pres.

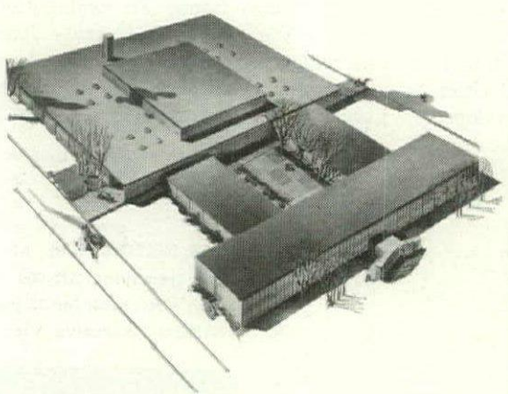


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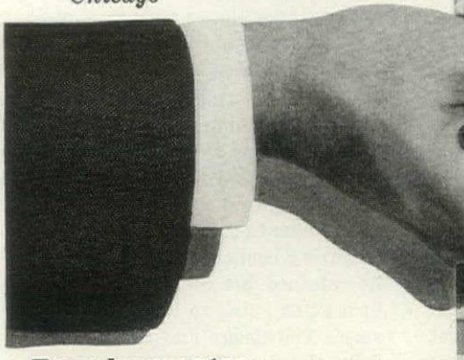


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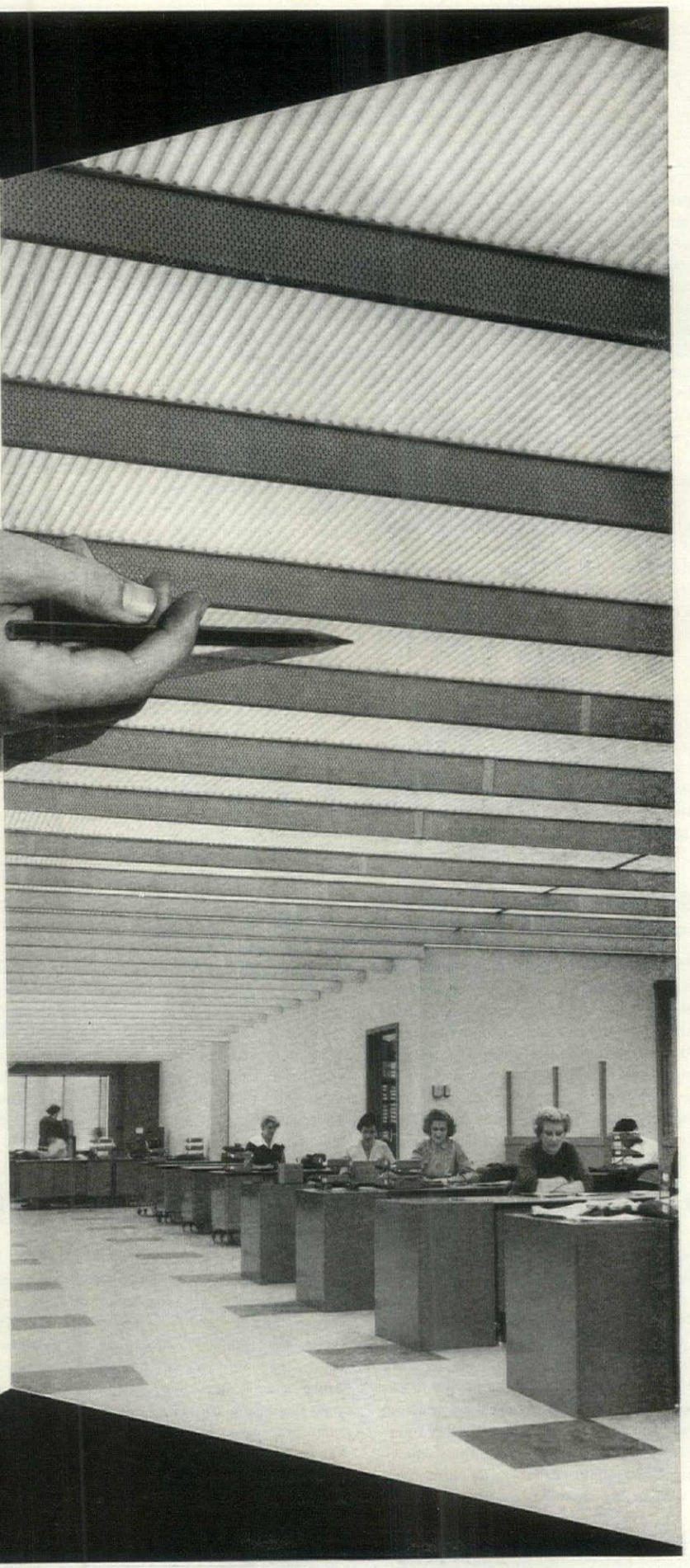
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so it simply declared that a realtor "should charge . . . only such fees as are fair and reasonable and in accordance with local practices in similar transactions." Said Conser: "Since the remainder of the code deals with practices, and since there is a disposition to regard any stipulation regarding fees as a movement toward the fixing of fees, it was decided to omit such a stipulation."

Appraiser-manager president. For 1956 president the convention elected Clarence M. Turley of St. Louis, which will be the scene of the 1956 annual convention. Turley was president of NAREB's Appraisal Institute in 1952. In 1936 he headed the National Association of Building Owners and Managers, and currently is NABOM's publication committee chairman. In acknowledging his election (he will not be inaugurated until mid-January) Turley told the convention that 1956 was going to be a "year of transition" for NAREB and he would have to devote considerable time to work at headquarters "orienting and retooling the association for the years ahead" as Conser takes over all the responsibilities formerly handled by retired Executive Vice President Herbert U. Nelson. For that reason, said Turley, he will not make all the visits to state and local realty boards around the country that former presidents usually made every year.

New 1956 presidents elected by NAREB's various institutes: Appraisers, A. N. Lockwood of Newton, N. J.; Brokers, Charles J. Pietsch of Honolulu; Managers, William A. P. Watkins of Chicago; Society of Industrial Realtors, LeRoy D. Owen of Los Angeles; Society of Real Estate Counselors, Philip W. Kniskern of Philadelphia.

Purge report puts grim end to Soviet experts' US tour

For almost six weeks the ten Soviet building experts, touring the US under the auspices of the National Assn. of Home Builders, had a seemingly carefree time, marred only occasionally by a few sharpshooting American hecklers. Behind a façade of joviality they turned aside all political inquiries and successfully quipped their way through a National Press Club luncheon in Washington, where loaded questions are the rule.

When not acting as the highly amused, and amusing guests, however, the party proved to be astute technological reporters, shrewdly took full notes on all the newest building techniques and equipment they observed, ordered a nail-driving machine and other tools (as well as an entire California prefab house).

Then on the eve of their departure, grim news suddenly ended the holiday spirit that had characterized so much of their grand building tour. From Moscow came word that delegation member Alexander V. Vlasov, head of the Soviet Academy of Architects and formerly chief architect of Moscow, had been dismissed, and all his former government decorations revoked.

According to a cabinet statement Vlasov and three other top Moscow architects (A. M. Chechulin, and the designers of the elegant 28-story Leningrad Hotel in Moscow, Polykov and Boretsky) had not "lived up to programs prepared for them." More specifically it was charged that the Soviets' modern construction progress "would have been more considerable had [it] not been hindered by great drawbacks and errors in the drafting processes and in construction itself. . . . [There was] enormous superfluity which does not correspond with the lines of the party and the government in the architectural building plans . . . [and cases of] flashy ornamentation and other highly expensive details which only give buildings an archaic appearance."

A second-day Moscow broadcast repeated Vlasov's name and boosted to 12 the list of high-ranking designers being dismissed or stripped of their honors in this collective dressing down of Soviet architects.

In Seattle, while inspecting a new school designed by Ralph Burkhard, the gregarious Vlasov had commented that "if the Soviets could build as economically and construct as lightly, we would be a wealthy country." Discussing mutual understanding, he told Seattle's Victor Steinbrueck: "All architects speak the same language." But not all face the uncertainties that confront the designer in a dictatorship who fails to align building and party lines successfully, or finds the party line shifting after his building has been finished.

Strobel gives up PBS post after House group probe

"I am grateful for the opportunity this country has given me to make a place in the world for myself," said Danish-born Peter Strobel in June 1954 to Washington newsmen. "By taking this job perhaps I can partly pay back this country." With that, Strobel left Strobel & Salzman, a Manhattan engineering partnership that paid him about $100,000 annually, for the $14,800-a-year job of Public Buildings Commissioner in the General Services Administration.

Last month, after a series of hearings before Rep. Emanuel Celler (D, N.Y.), head of the House Judiciary Committee, which is probing cases of possible conflict of interest of businessmen in government, Strobel quit as PBS Commissioner.

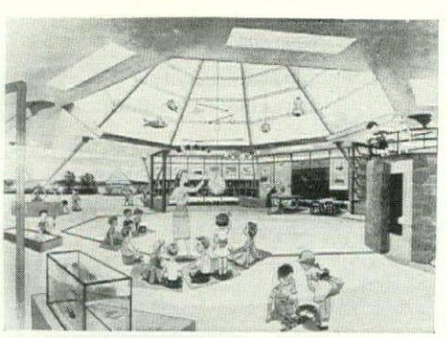
During the hearings Strobel had vigorously denied ever using his official position to further his firm's interest. "If they want to get rid of me," he declared, "they'll have to fire me. I'm not the kind of man who runs." The New York *Times*, however, attributed his subsequent resignation to "direct pressure from the White House." His letter of resignation to GSAdministrator Edmund F. Mansure said "the mere existence of my private business connections will be seized by some people to create suspicion and embarrass me and the Administration."

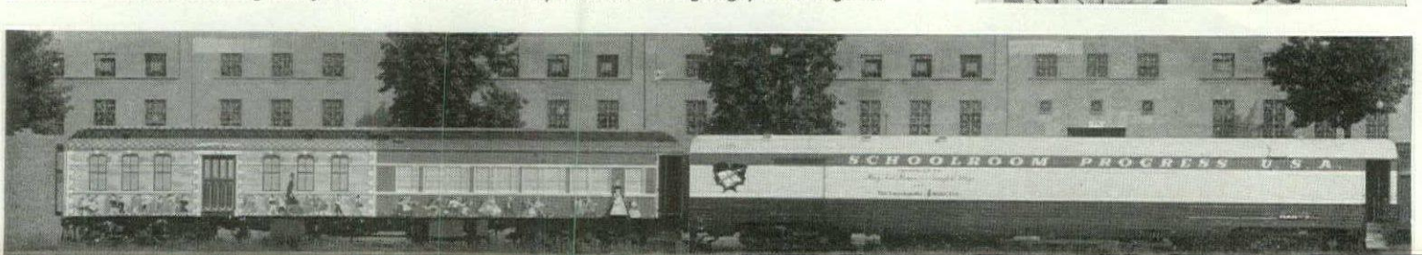
During committee hearings, Strobel said he retained his controlling interest in his firm after going to Washington with Mansure's knowledge and consent. His income from the firm, he reported, dropped more than 50% after he entered government service and he could not participate in its business. He admitted participating in a conference that led to the awarding of a $16,390 design contract for remodeling a government building to a Manhattan architectural firm, which was also one of his company's clients. Another time, said the committee, Strobel personally went to Ferrenz & Taylor, a Manhattan architectural firm which had hitherto done no business with his firm or with the Government, and solicited an $18,000 construction contract for his engineering company.

After the hearings, GSA Chief Mansure

Exhibition train starts tour to show 150 years of progress in schoolroom design

A two-car train showing how the little red schoolhouse has changed in the last 150 years from a prison for children to a pleasant classroom plexus has begun a three-to-five year national tour. This tribute to architectural achievement is sponsored by the Henry Ford Museum at Dearborn, Mich., and the "Encyclopedia Americana." In the car showing yesteryear schools are reconstructions of nineteenth-century classrooms containing whale-oil lamps, McGuffey readers and birch rod switches. The car showing today's classrooms contains segments of five rooms, designed by five winners in AIA's Honor Award program, and enlarged color transparencies of each classroom. At right is a sketch of the exhibition's contemporary kindergarten classroom design by John Lyon Reid, San Francisco. Other rooms and their designers: industrial arts classroom, Curtis & Davis, New Orleans; office practice classroom, John Carl Warnecke, San Francisco; home economics classroom, Perkins & Will, Chicago; elementary room, Smith, Powell & Morgridge, Los Angeles.





told newsmen: "Strobel has done nothing really wrong, but he just didn't use good judgment." Later he accepted Strobel's resignation "with regret," said it was the "wise" action "under the circumstances," and praised him for having contributed "immeasurably" to the government's building program.

All Mansure had to do next was find another capable director to take charge of the multimillion dollar PBS design and construction program at $14,800 a year!

Columbia University urban land use institute folds; NAREB urges another

Real estate research suffered a heavy casualty last month. For lack of financial support from the industry over eight discouraging years, Columbia University disbanded its Institute for Urban Land Use and Housing Studies.

There was no public announcement of the institute's demise, and only a few observers were aware of the irony of the resolution the NAREB convention was adopting about the same time urging the creation of "a center for research in the economics of real estate and related subjects."

The realtors' resolution proposed that an "independent research organization for all facets of real estate activity" be established within NAREB's Urban Land Institute. Explained NAREB President Henry G. Waltemade: "This is a long sought step toward creation of facilities for concentrated research. . . . It is anticipated that basic research by ULI can develop fields of detailed study in land economics that can be carried out by universities."

NAREB officials disclosed nothing about how their proposed new research body would be financed, but they could draw little cheer from the experience of the Columbia Institute if they were going to seek any sizable underwriting from the industry.

Initially the Rockefeller Foundation gave the Columbia institute a $100,000 grant for a three-year period, later $66,000 for three more years on condition that other sources provide the balance it needed. But in the eight years from 1947 to 1955, real estate firms contributed only $10,000, savings banks $6,500 and others $3,000 (for a total of $19,500). Columbia provided $113,500. Important help also was received indirectly in the form of contracts for $34,000 for studies for HHFA and the Bureau of Public Roads, and payments of $126,000 for specific projects the institute undertook for the Life Insurance Assn. of America, the National Bureau for Economic Research, the Regional Plan Assn., the Social Science Council, Twentieth Century Fund and the University of Pennsylvania.

But with no substantial funds forthcoming from industry sources, the Rockefeller Foundation and the university were unwilling to finance the institute any longer. Contract and project funds could only be used for specific studies, could not be expected on any regular schedule, and thus it became virtually impossible to hold the staff together on any practical basis.

Dr. Ernest M. Fisher, director since the institute was established, is remaining at the university to teach seven various realty courses as Professor of Urban Land Economics in the business faculty.

Dr. Leo Grebler, assistant director, has left to join the President's Council of Economic Advisers, while Research Associate Louis Winnick has joined the staff of New York's City Administrator Luther Gulick; Associate John Rannells has joined the Philadelphia Transportation Board staff; Associate Chester Rapkin has joined the University of Pennsylvania faculty, and Associate David M. Blank has joined the Columbia Broadcasting System staff.

ASHAE adopts $223,000 research budget—up 10%

At the fall meeting of the council of the American Society of Heating and Air-conditioning Engineers a research budget of $223,825 was approved for 1956, an increase of about 10% over 1955. New projects now being organized may cause further budget increases later, said President John E. Haines of Minneapolis.

Currently ASHAE has 17 comprehensive research projects under way, financed by allocating 40% of dues for such work, supplemented by contributions from companies and other organizations in the industry. Six projects are being conducted by staff researchers in ASHAE's own laboratory; eleven others by contract arrangements with the University of Minnesota, Kansas State College, Battelle Memorial Institute, University of Illinois, Northwestern University and University of California.

ASCE directors ease stand toward engineer bidding

Directors of the American Society of Civil Engineers, aware of the gray area where the ethics of their profession merge with the practicalities of their business, a month ago eased their stand against competing for assignments on a price basis.

The directors recommended amending ASCE's code of ethics to permit civil engineers to state their price when competing for work so long as there are "reasonable grounds for belief" that price is not the main consideration in who gets the job.

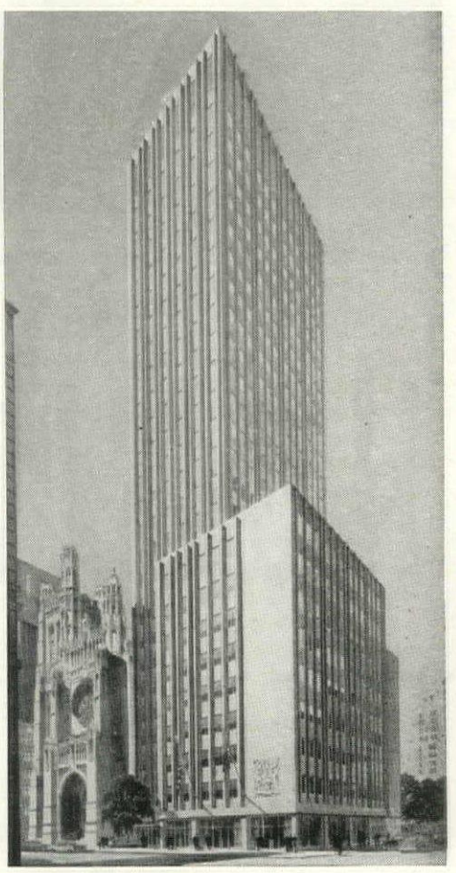
This is a considerable change from the directors' position of stern rebuke last year when it became impossible to ignore the widespread practice of engineers to put their services on the price block.

In a full schedule of technical sessions and panel discussion at their convention in New York, the engineers:

- Heard a number of hindsight speeches advocating stringent zoning regulations to block the spread of industry and housing into flood plains.
- Heard a warning by Arthur C. Stern, chief of the US Public Health Service's air pollution control program, that if "in the next century we fail to improve the protection of our atmosphere, it may well be the air resource that will limit our growth as a nation."
- Heard Contractor Roger Corbetta, commenting on engineer education, accuse engineering schools of "grinding out of [graduates] any originality or daring that they may have had."

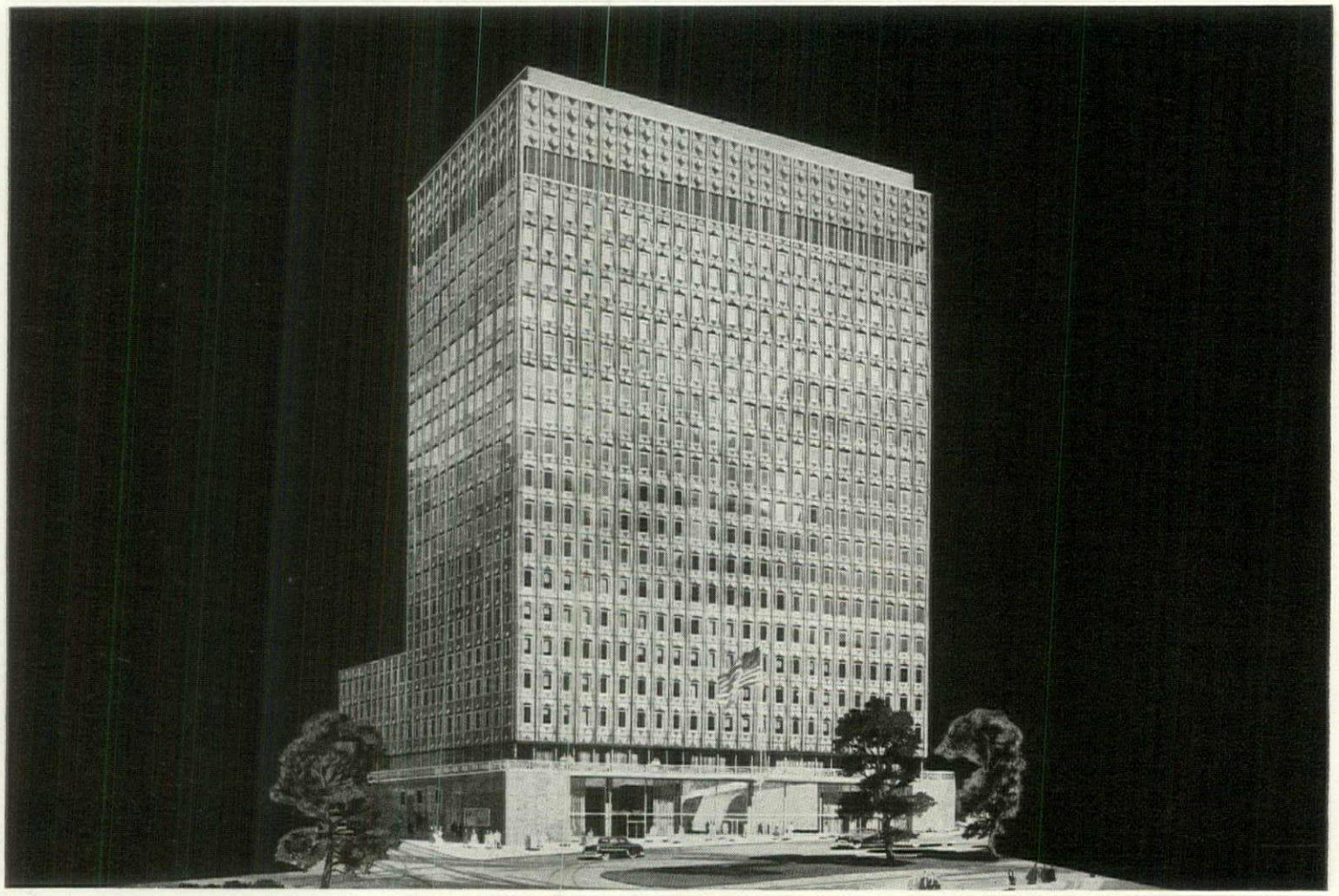
Park Martin, new president of the American Society of Planning Officials, and executive director of Pittsburgh's Alleghany Conference on Community Devel-

continued on p. 21



5th Ave. tower to rise for Canadian groups in New York

A 27-story steel-and-limestone office building, slimmed and elongated by vertical limestone fins, will house Canadian government, cultural and business offices in New York. The $6 million structure, designed by New York Architects Eggers & Higgins, will be started next month on the west side of Fifth Ave. at 54th St. The tower of the 175,000 sq. ft. building will be set back 26' from the building line. Construction will be financed by a syndicate of Canadian businessmen that will operate the project until paid for, then offer it to Canada as a gift. Contractor: Walsh Construction Co.



COMMERCIAL CREDIT OFFICE BUILDING
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Baltimore, Maryland
Architects: Harrison & Abramovitz

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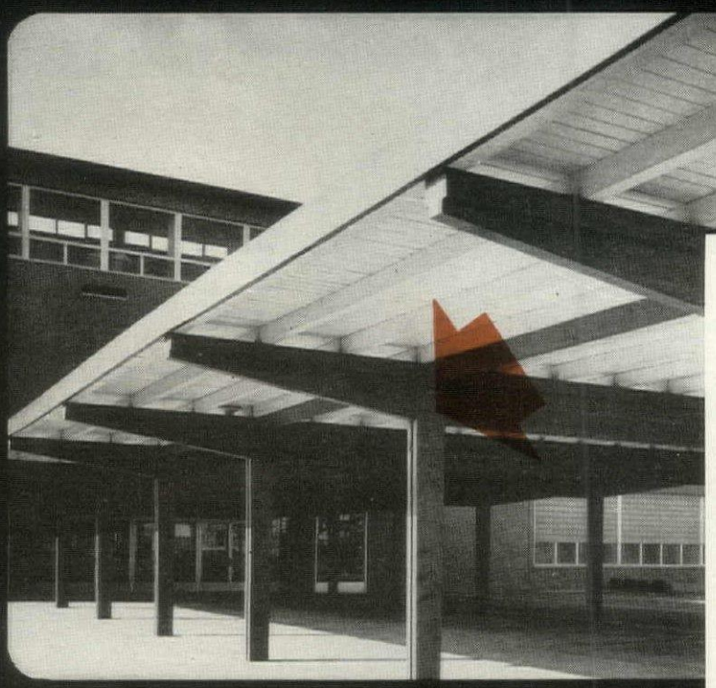
As Hollow Metal Men, we are proud to have provided the products starred (*) for The Commercial Credit Office Building.

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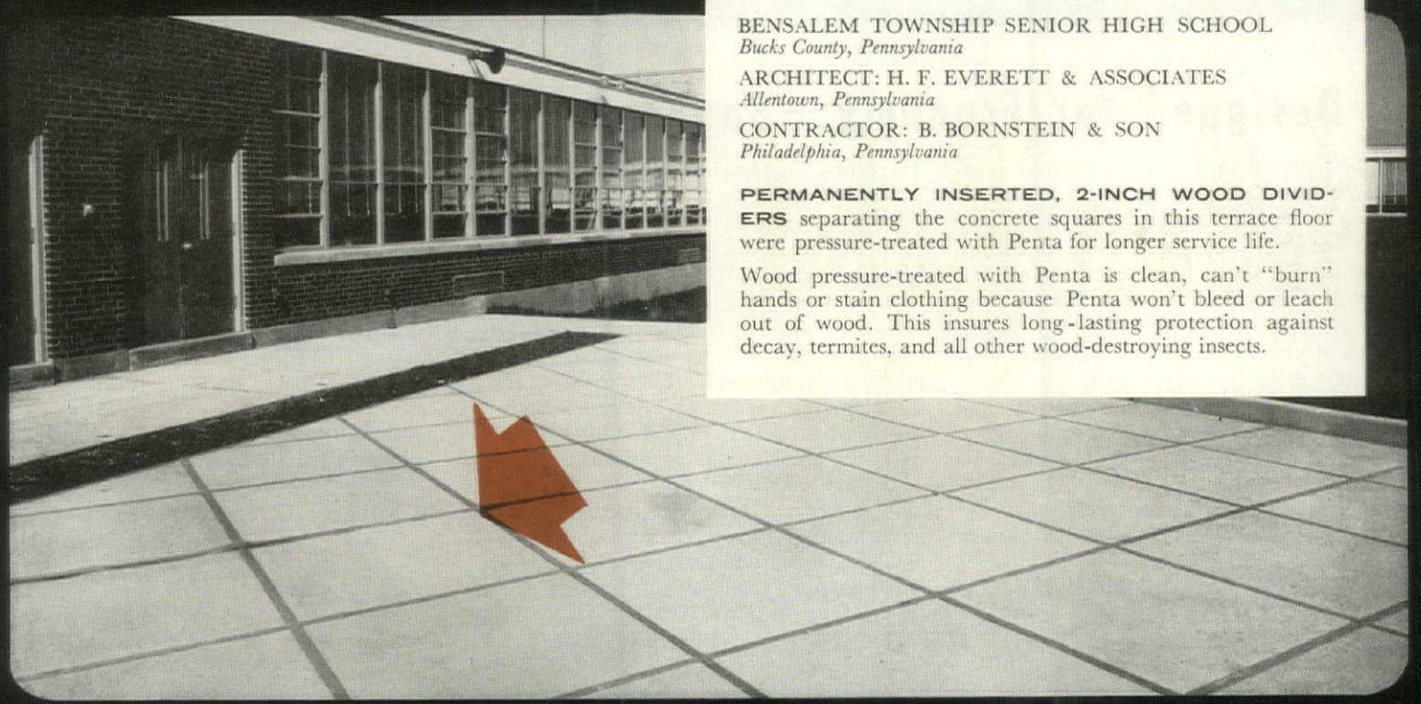


BISHOP DUBOURG HIGH SCHOOL
St. Louis, Missouri

ARCHITECT: MURPHY & MACKEY
St. Louis, Missouri

CONTRACTOR: C. RALLO CONTRACTING COMPANY, INC.
St. Louis, Missouri

LARGE WOOD PORTE-COCHERE for this St. Louis school was pressure-treated with Penta before installation, to resist insects and decay promoted by repeated wetting and drying of exposed wood. Treatment with Penta leaves wood clean and uncolored, permits architect to specify his own choice of wood finish! Millwork was also Penta-preserved, with these important secondary benefits: water-repellent solution of Penta acted as base coat for subsequent finishes, helped reduce warping and rotting of wood.



BENSALEM TOWNSHIP SENIOR HIGH SCHOOL
Bucks County, Pennsylvania

ARCHITECT: H. F. EVERETT & ASSOCIATES
Allentown, Pennsylvania

CONTRACTOR: B. BORNSTEIN & SON
Philadelphia, Pennsylvania

PERMANENTLY INSERTED, 2-INCH WOOD DIVIDERS separating the concrete squares in this terrace floor were pressure-treated with Penta for longer service life.

Wood pressure-treated with Penta is clean, can't "burn" hands or stain clothing because Penta won't bleed or leach out of wood. This insures long-lasting protection against decay, termites, and all other wood-destroying insects.

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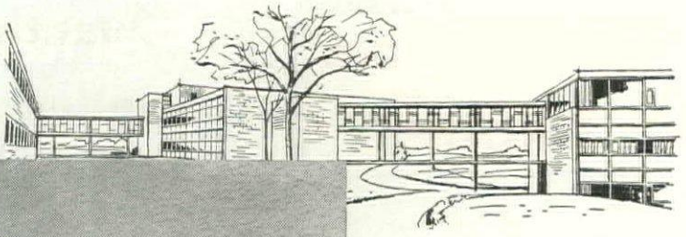
Please send ( ) FREE Penta booklet
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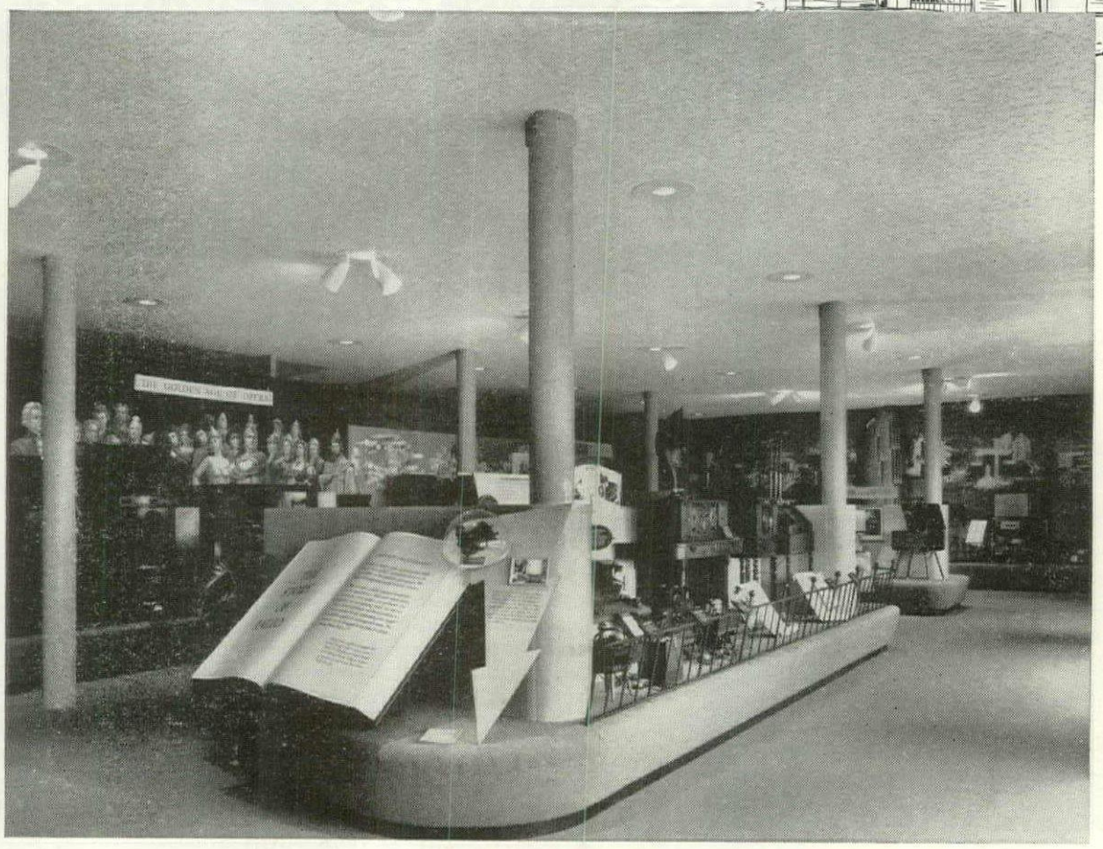
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Address.....

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RCA Cherry Hill Project, Camden, New Jersey
Architect: **Vincent G. Kling**
Architectural Consultant: **I. M. Pei**
General Contractor: **Turner Construction Company**
Acoustical Contractor: **Berger Acoustical Company**





To provide quiet surroundings for public exhibitions, a ceiling of Armstrong Travertone was installed in the RCA Hall of Progress. Travertone is easily cut and fitted for economical installation with overhead lighting fixtures.

Designed for Economy—Sound Conditioned for Comfort

It took more than two years of intensive research to determine the design of RCA's new Cherry Hill Project. Both multi-story and one-story construction had shortcomings for RCA's widely varied operations. The best solution was a compromise of five interconnected buildings — each two or three stories high — with equivalent floor space of a 35-story skyscraper.

Contemporary design was used to help reduce construction time and costs with a minimum of easy-to-maintain materials. To provide beauty as well as quiet, sound-muffling ceilings of Armstrong Travertone and Cushiontone were used extensively throughout the buildings.

In the office areas and Hall of Progress, Travertone, a mineral wool tile, was installed. Travertone is an attractively textured material that absorbs up to 80% of the noise that strikes it. Completely incombustible, it meets all fire-safety codes.

Areas containing business machine installations are kept comfortably quiet with ceilings of Armstrong Cushiontone. High in efficiency, this perforated wood fiber tile is remarkably low in cost. And its modern, Full Random pattern of perforations blends well with the contemporary styling.

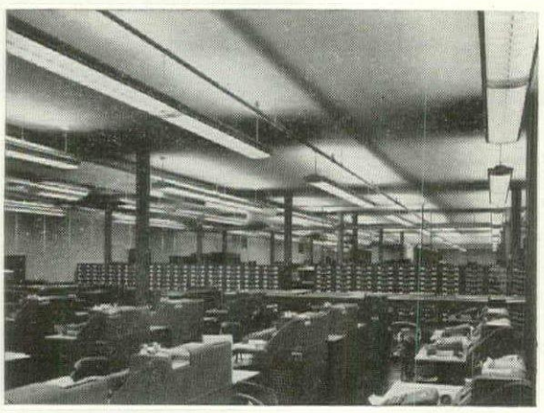
To save on construction costs, Cushiontone and Travertone were cemented directly to the concrete ceiling slabs. Both materials are easy to keep clean. They can be repainted readily and economically without any appreciable loss of efficiency.

Get complete data on Travertone, Cushiontone, and the full line of Armstrong sound-conditioning materials from your Armstrong Acoustical Contractor. For your free copy of the booklet, "Armstrong Acoustical Materials," write Armstrong Cork Company, 4212 Rooney St., Lancaster, Pa.

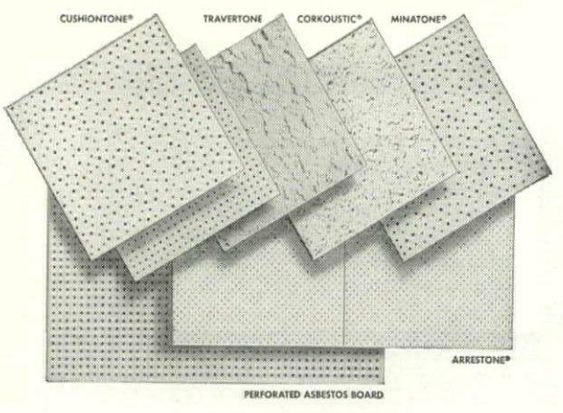
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To quiet large areas economically, architects often select ceilings of Armstrong Cushiontone. In this general office space, Cushiontone prevents the noise of many business machines from building to disturbing levels.



opment, was given ASCE's top award—honorary membership. Enoch R. Needles, senior partner in the New York consulting firm of Howard, Needles, Tammen & Bergendorff, was installed as president, succeeding W. Roy Glidden of Richmond, Va.

Engineers' and architects' rules altered in two states

A bill was signed into law last month in Wisconsin permitting registered civil engineers to design residential and apartment buildings.

Gov. Walter Kohler had not been expected to sign the bill, passed by the Senate in October and by the Assembly last spring over heavy opposition from Wisconsin architects. Heretofore engineers had been permitted to design only industrial buildings.

California was tightening up on unaccredited architects again. The State Board of Architectural Examiners recently decreed that only one temporary license for one project can be issued to an out-of-state architect. Then he must become registered in California. The board also was seeking a ruling from the state attorney general to allow it to bar nonprofessionals from partnership in architectural firms.

Arrangements have been completed for a California referendum next year on a constitutional amendment to permit the state to employ private architects, engineers and consultants for peakload design work.

Voters OK $471 million projects, veto $982 million

In referenda last month voters of several states acted on $1.46 billion of proposed construction bond issues, approving $471 million and turning down $982 million.

Even so, municipal financiers were not convinced there was an antiborrowing trend developing; they pointed to the fact that twice as many proposals were approved as were rejected. New Yorkers refused to borrow $750 million for highways, accounting for a huge part of the dollar total rejected nationwide.

Of the $471 million approved, about $300 million will be borrowed to pay for state and city buildings and municipal improvements, such as parks and sanitary facilities. Typical was a $234 million issue approved in Ohio to build and improve mental institutions, prisons, public schools and state university buildings.

San Francisco voters were particularly choosy: they approved a $54 million power plant issue and $7 million for parks and playgrounds, but refused to buy a $13 million courthouse and $11 million worth of off-street parking space.

Undaunted by the off-year defeat of a $50 million plan for direct loans to builders of middle-income housing, New York state housing officials were preparing a request for a plan for five times that amount to be submitted first to Governor Averill Harriman and then—next fall—to the voters.

Quantity surveyors push unit-price bids; uniform building cost accounting urged

If a small group of quantity estimators, the Construction Surveyors Institute, had its way, the general contractor would be dethroned as king of the construction world and a three-way relationship among architects, clients and subcontractors—with the quantity surveyors acting as consultants to all—would be substituted.

For 30 years the quantity surveyors have been trying to effect such a revolution. The greatest obstacles that have blocked it lie in the traditions of the construction business, in the nature of the general contractor, and in the fact that most new building buyers are one-shot clients who never become sufficiently familiar with the business to call for reforms.

(From another quarter came a proposal for another reform in construction industry business practices. At the annual American Institute of Accountants convention in Washington, A. F. Lafrentz, board chairman of the American Surety Co. of New York, advocated studies to develop a uniform accounting system, particularly on costs, to overcome "confusion" in the construction field. Today almost every contractor uses his own particular method of arriving at costs, said accounting institute officials, but a uniform system would benefit all parties, and especially aid governments at all levels in awarding contracts and issuing bonds.)

Path to lower bids? At two conferences recently—in Los Angeles last month and in New York in September—the Quantity Surveyor Institute tried to work up fresh enthusiasm for its system. Its plan in brief: Take materials quantity estimating out of the hands of subcontractors (and general contractors who retain, say, the brickwork or carpentry in a building) and impose it at the architect-client level. In theory, giving all bidders certified quantity analyses should save them the expense of quantity estimating—"takeoff," as it is called—and reduce total building costs accordingly. This would result in unit price bidding.

Argues the institute:

"Competition [would thus be] confined to prices, and it may readily be extended with discretion to secure the most economical bid or price-value exchange. . . . The cost of surveying . . . must be paid for directly or indirectly in the price of all products. However, under the system in vogue the buyer pays for a multiplicity of analyses, estimates and bids without securing price competition. . . . The whole procedure is an orgy of waste." Quantity surveys at the architect level, says the institute, would be useful for gaging economy of tentative plans and final designs, testing completeness of bidding documents, verifying consistency and economy of general bids and subbids.

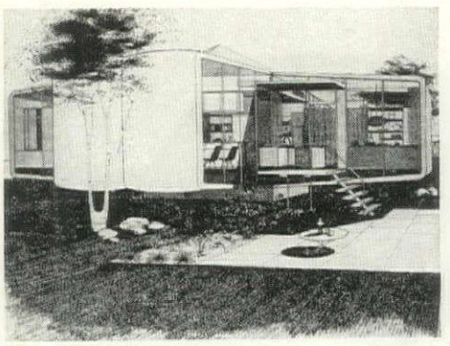
The institute recommends its surveys:

- As a basis for comparison of bids to insure fairness in competitive bidding, no matter what form of contract is used.
- As a basis for lump sum contracts, with plus and minus changes in quantity and quality of items adjusted by the surveyor.
- As a basis for unit-price contracts,

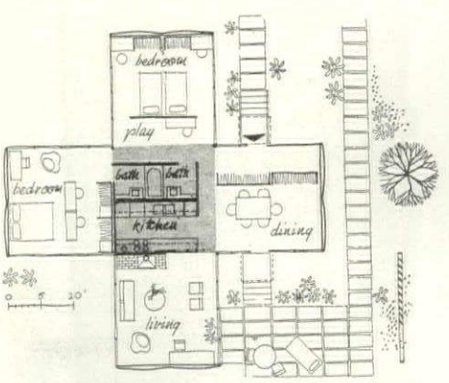
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Plastics house will be made of cantilevered modules

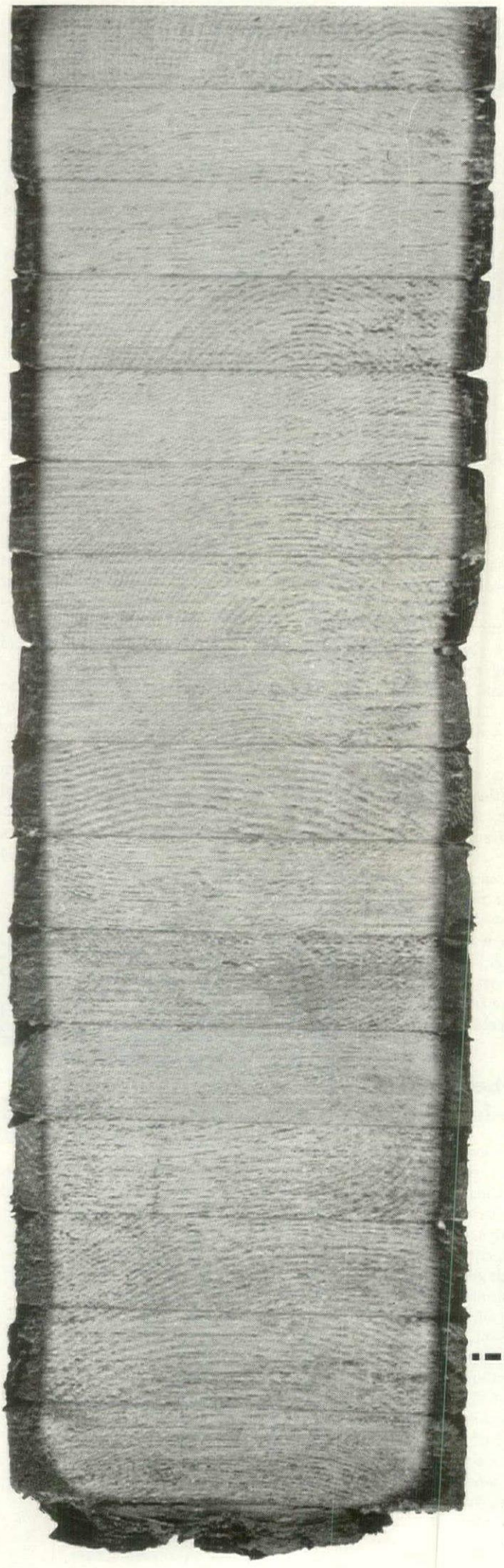
Last month's addition to the long "house of tomorrow" roster was an experimental creation of Monsanto Chemical Co.'s plastics division. The houses, which naturally will be built of plastics, will consist of 8′ x 16′ molded modules, cantilevered in pairs in a variety of arrangements from 16′-square utility cores. Monsanto, which has been pushing construction plastics research vigorously (AF, Sept. '55), thinks the molded-module design may lead to the nation's first true production-line house. The design, being refined at Massachusetts Institute of Technology by Architect Marvin Goody, makes full use of plastics for non-structural elements too: laminates (combining plastics with wood, paper or cloth) for counters, walls, tables; glass-reinforced lighting panels; conduits, ducts, piping; gaskets and stripping; foamed insulation.



Excavation is confined to central utility core. Compression ring at top secures plastic modules.



Basic plan: four cantilevered bays





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Through generations of fire history, heavy timber or "mill-type" construction has proved the ability of heavy timbers to resist destruction by fire more effectively than other unprotected structural materials. A recent test shows why:

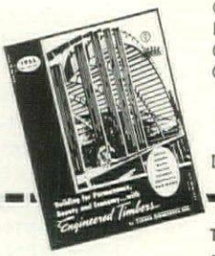
The glulam timber shown at the left was exposed to direct flame for one hour at an average temperature of 1200 degrees. The section at the beginning of the test measured 9″ x 27¼″; at the end of the hour, sound, uncharred area of 7¼″ x 26″ remained. Thus, with 77% of its original section undamaged, the timber was capable of continuing in service with a safety margin of greater than 2 to 1.

The ability to resist destruction by fire is one reason why heavy structural timbers by Timber Structures, Inc. provide the practical approach to buildings of permanence, economy and beauty. Other advantages, together with outstanding examples of engineered timber construction and a wealth of preliminary design information, are shown in the booklet, "Engineered Timbers." Get your copy from your nearest Timber Structures representative, or fill-in and mail the coupon below.



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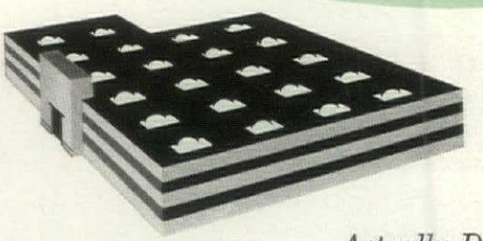
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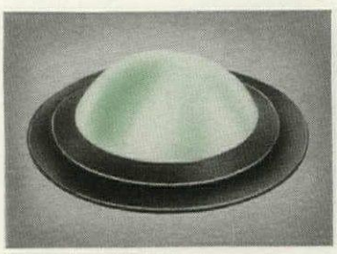


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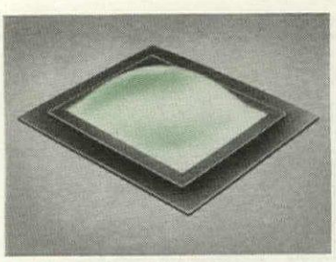
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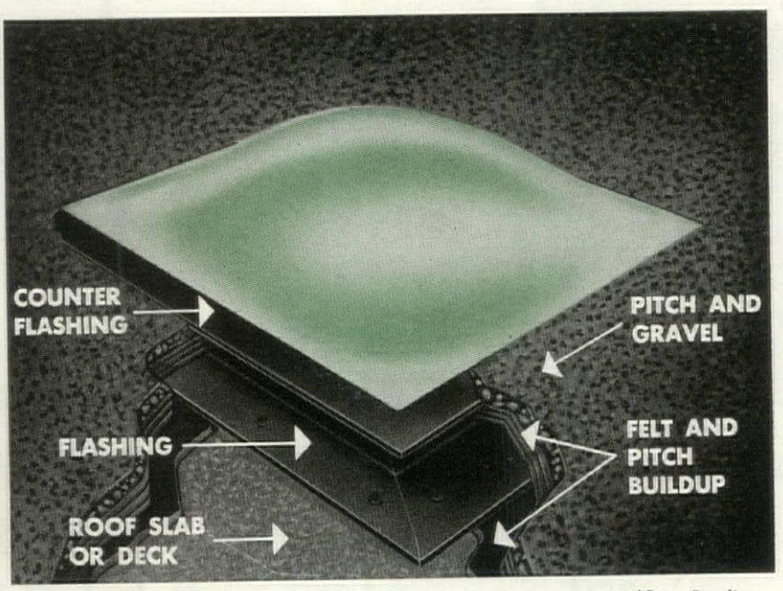
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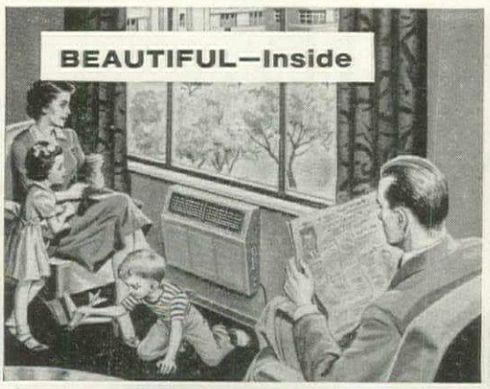
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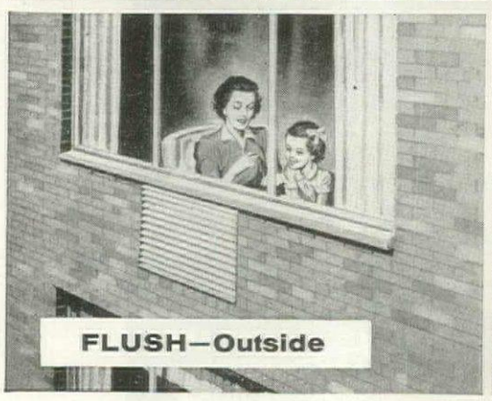
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where payment is made for items put in place.

Fee systems for estimators. Payment for surveys can be made, says the institute, at a fixed price, percentage rate fee, hourly rate, or by subscription. Percentage fees would run from 0.25% to 3% of the estimated value of items surveyed, depending on the scope and character of the services. Fee would be paid by the construction buyer.

Geza Szmac, founder and executive secretary of the institute, slanted his conference talks almost entirely toward buyers of construction and their architects. There also was much talk among institute members about educating general contractors and subcontractors to accept professional quantity surveys.

Ideal vs. practice. Ideally, from the client's standpoint, the use of professional quantity surveys before calling for bids should reduce construction costs, although just how much is debatable.

Ideally, from the subcontractor's standpoint, quantity surveys should reduce estimating costs and—more important—allow him to bid on many more jobs each year than he can now.

In practice, however, neither general contractors nor subs, with the exception of some mechanical specialists like electrical contractors, have shown much inclination to change the nature of their relationship. Subs gripe about bid shaving and bid shopping, but a closer look reveals that they usually put plenty of fat on the first prices they offer general contractors. And, when a general contractor goes shopping for subcontract bids, he finds plenty of subs peddling bids. The institute's interest in establishing direct dealing between clients (and architects) and subcontractors is sure to antagonize general contractors and most subs. What is more, some construction experts also doubt whether elimination of the general contractor would reduce costs to the client. They say the general contractor co-ordinates the work of subs in ways unknown to inexperienced clients, and acts as a watchdog on costs.

The institute notes that its plan is similar to the traditional English system, in which the architect is supreme. The English architect makes accurate quantity surveys, nominates subs and controls them on the job. But on this score, one big British builder, Norman E. Wates, who has built here as well as in England, says US building costs are only 20% to 50% higher than British costs, although British construction workers earn only 20% to 25% of what American craftsmen are paid. Wates attributes this relatively small cost differential to the supremacy of American general contractors and their control over the work of subs.

Shelter in "dark area." General contractors' objections to introducing "takeoff" work at the architect level range from a horror of any innovation that might upset or modify the status quo of the construction industry (a good many contractors still see themselves in the dramatic role of rough mountainmovers who take enormous gambles daily), to a sincere business-minded objection to any innovation that could give the construction client a closer look into, say, quantity estimating. The general contractor does indeed take risks, and he seldom wants his clients to know the details of subcontracts. In a business combining risk-taking and close competition, certain dark areas can mean the difference between moderate or slim profit to the contractor.

Subcontractors also want to keep quantity takeoff work within their control to keep competition down. Their business is cutthroat enough now, they argue. Said one: "Take the mystery and work out of takeoff, and we'll have a thousand more competitors within a week." Said another: "We would only have to check the quantity estimates anyway. Where's the saving in that? Ten per cent, maybe. That's all."

The Associated General Contractors of America takes no position on the institute's plan. One specialty group, the National Electrical Contractors Assn., likes the idea of separate bids for subcontract work, but thinks their members are far better qualified to do quantity estimating for electrical jobs than consultants.

A few architects at the New York meeting liked the institute's plan. Said one: "We've been doing things their way for years. Take-off work before bids are called for helps us design buildings within the client's budget, and gives us a close check on the bidders."

Joint labor relations discussions proposed among all employer groups

Seeds for a labor relations conference of national leaders of all big employer groups in the construction industry—general contractors, specialty contractors and home-builders—were planted at a contractors' regional meeting in Duluth a month ago. Labor Director Andrew Murphy of the National Assn. of Home Builders made the suggestion at a construction employers' conference sponsored by the Duluth Builders' Exchange.

Said Murphy, after outlining construction labor trends of 1955: "The problems they will face as a result of the AFL-CIO merger might well be a subject of national discussion by the various construction employers' groups throughout the country. . . . There is too little liaison and too infrequent an exchange of views and opinions."

The suggestion was made to a receptive audience, for the 150 or so contractors from northeastern Minnesota and northern Wisconsin gathered in Duluth were doing on the local level exactly what Murphy was recommending for the big national groups. The Duluth conference was unique in two ways:

- It was a joint meeting—on amicable terms—of general, specialty and housing contractors and their suppliers.
- It was held at a time when no contract negotiations were underway. Contractors rarely meet to discuss negotiations on labor matters until driven together for mutual defense at contract time.

Contractors attending the Duluth conference were enthusiastic about off-season labor relations discussions. Most were hungry for information and tips on negotiation procedure that would strengthen their positions at the bargaining table.

Are they ready? How national contractor group leaders would feel about joint discussions on labor—or any other problems—was a matter for speculation. Traditionally, the big groups have been suspicious of each other, have emphasized their differences instead of their common problems.

Murphy's suggestion was heartily approved by Eugene R. Lambert, manager of the Duluth Builders' Exchange. He said: "Construction, the nation's largest industry, has no way of getting together with one voice. It has been doing the poorest labor relations job of any industry."



Glass building for Heinz's labs and executive offices

Double glass skin will protect workers from sun heat and glare in a new Pittsburgh laboratory and executive-office building for H. J. Heinz Co. The $3 million center will contain a pilot food plant, experimental kitchens, research labs, quality control units and a research library. Mullions will be aluminum, and windows will have push-button operated washing devices. Architects: Skidmore, Owings & Merrill; contractor: Geo. A. Fuller Co.

for news about PEOPLE—*p. 29*



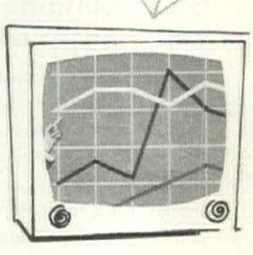
ii-TV®...a new catalyst

ii-TV is a dramatic new tool for America at work. For *ii-TV*—the GPL *industrial* and *institutional* closed-circuit television system—makes *visual* communication as simple as the telephone made *verbal* communication. From his own desk, a viewer can confer face to face with colleagues across the nation, study a production line in a factory, read a dial in an unattended substation, consult files deep in a sub-basement. One person can visually demonstrate a subject simultaneously to widely separated groups. Or he can keep a watchful eye on the gates and aisles of a huge warehouse. An engineer can look safely into the dangerous depths of a jet engine test cell or observe the workings of a whirling machine. GPL *ii-TV* makes all these things possible—and hundreds more besides.

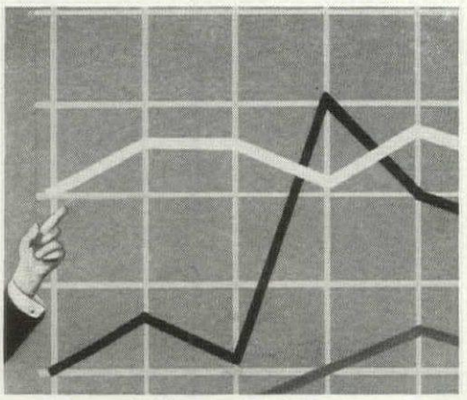
But to the architect GPL *ii-TV* is much more than a tool. By removing the necessity for physical proximity of things which must be seen, *ii-TV* frees the architect from limitations that have existed since building began. Like the elevator and the telephone, *ii-TV* promises to be a catalyst that will materially change concepts of building design.

New uses are turning up every day. Already a list of buildings where *ii-TV* has applications is practically a list of the places where people work: schools, hospitals, office buildings, factories, warehouses, department stores, prisons, power stations, laboratories, libraries, banks, supermarkets, railroad stations, airline terminals—everywhere that man wants to see something that is out of sight, or show something to a distant viewer, instantly and accurately.

Here is a double opportunity for the architect. Modern buildings need GPL *ii-TV*. By planning for it as an integral part of buildings on his boards, he can make sure that his clients will use it with maximum efficiency. At the same time it offers to the architect a new creative dimension. For with *ii-TV* he can rise above many of the physical limitations that have controlled building design since the days of pharaoh's palace and find new solutions to the eternal problem of all architecture—the arrangement of space in the service of man.



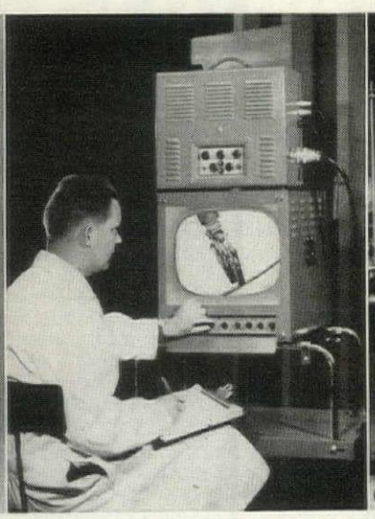
Our engineers will be glad to supply detailed information and to consult with you regarding inclusion of GPL *ii-TV* in your plans.



for America's Architecture



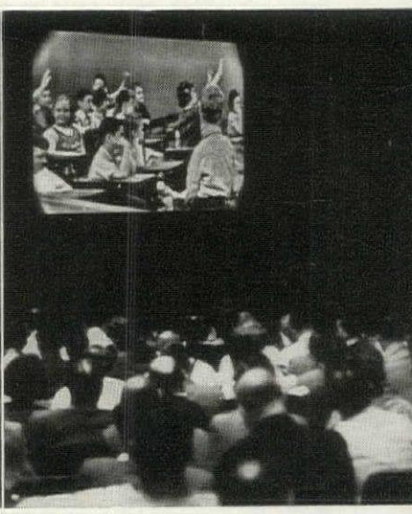
IN HOSPITALS and other institutions, GPL *ii-TV* enables nurses to watch individual patients and supervise whole wards. Guards can monitor gates, corridors and other key points.



IN LABORATORIES, mills, factories, GPL *ii-TV* permits economical monitoring of remote or dangerous processes. Above, observer follows operation within a test cell. Other uses include plant protection and instructing workers.

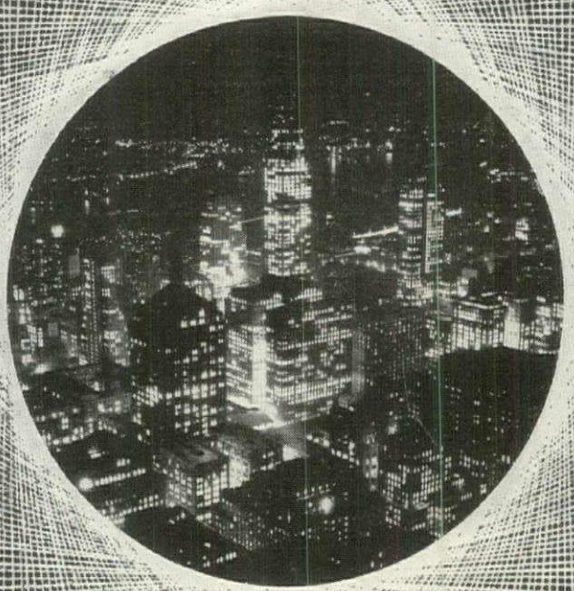


IN BANKS, offices, stores, GPL *ii-TV* permits highly efficient use of space by location of records off business floors and wherever maximum economy dictates. Above, a bank teller verifies customer's signature and balance.



IN SCHOOLS and colleges, with GPL *ii-TV* one teacher can reach many classes in many schools simultaneously. Above, over-life-size pictures are thrown on wide screen by GPL TV projector.

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PEOPLE

Candidates named for US London Embassy design contracts; Rear Admiral Meade heads BuDocks; Martin P. Durkin dies

Whether it was the natural climate, the business climate, or other causes, California had bred another architect vs. architect court hassle. This one started when Bakersfield Architect **Edward J. Kenney** was charged with three misdemeanor violations of the state business and professions code last March (one that he was acting as an architect without a state certificate, the other two that he was doing likewise as a civil engineer without being registered). When he was tried in Bakersfield Municipal Court he was acquitted. Subsequently he filed suit for $502,600 against the state board of architectural examiners and Fresno Architect **Howard Schroder,** his former partner, for malicious prosecution. He asked for the $2,600 for costs on his municipal court defense, the other half million dollars for loss of reputation and business. Named as defendants besides Schroder were examination board investigator **Leo S. Whitaker,** who signed the original charges; board executive secretary **Robert K. Kelley** and board members **Ulysses Floyd Rible** (president), **Norman K. Blanchard, Earl T. Heitschmidt, C. J. Paderewski** and **George P. Simonds.** All filed answers denying the complaint and claiming immunity from civil prosecution on the ground they were carrying out statutory duties. Schroder filed a demurrer that was overruled, and also a general denial. In affidavits, several former employees of the Kenney-Schroder partnership said they were under instructions that all plans and specifications had to be approved by Schroder before being released to clients. Kenney accuses board investigator Whitaker of sending letters to local school boards, after Kenney and Schroder had split, saying that Kenney was no longer able to offer architectural services. After the split, says Kenney, he affiliated with licensed Architect **J. Henry Maag.**

CONGRATULATIONS: To Architects Harvard Design School Dean **Jose Luis Sert, Ernest J. Kump** of San Francisco, **Eero Saarinen** of Bloomfield Hills, Mich., **Edward D. Stone** of New York, **Hugh Stubbins** of Lexington, Mass., **William Wurster** of the California University school of architecture, **Minoru Yamasaki** of Detroit, and **Lawrence B. Anderson & Herbert Beckwith** of Boston, who have been invited into a restricted competition for a new US Embassy in London; to Realty Operator **Arthur Smadbeck** and former N.Y. Real Estate Board President **Peter Grimm,** heads of the exhibition corporation given the first ten-year lease on the New York Coliseum, offered for sale to any private bidders by Construction Coordinator **Robert Moses** for its basic cost of approximately $35 million; to Newark, N.J. Realtor **Ralph G. Schwebemeyer,** former national SIR president, who was broker for the $4 million sale of the New Brunswick, N.J. Studebaker-Packard plant to Volkswagen of America, who will use it for mass assembly of the low-cost German car in the US.

NAMED: **Rear Adm. Robert H. Meade,** 50, director of construction for US air and naval bases in Spain, as chief of the Navy's Bureau of Yards and Docks ($400 million in construction under way, $500 million on the boards), succeeding **Rear Adm. John R. Perry,** who died in September; **Dwight D. Townsend,** former director of field education of Consumers Cooperative Assn., Kansas City, Kan., as special assistant to FHA Commissioner **Norman Mason** for cooperative housing, to nourish FHA's lagging co-op program; **Lt. Gen. Lewis A. Pick,** retired chief of the army's Corps of Engineers, as board chairman of John J. Harte Co., Atlanta, Ga., architects, engineers and construction managers.



MEADE

ELECTED: **T. Cortlandt Williams,** executive vice president of Stone & Webster Engineering Corp. as president of the firm, succeeding **Russell T. Branch,** who became chairman of the board; **Austin R. Zender,** executive vice president of Bridgeport (Conn.) Brass Co., as president of the Copper & Brass Research Assn.; **Carl D. Himes,** Dayton, Ohio, as president of the National Builders' Hardware Assn., and **Arthur H. Uhler,** New Britain, Conn., as president of the American Assn. of Architectural Hardware Consultants, at concurrent conventions recently in St. Louis; **Chester A. Smith,** Columbus, Ohio, as president of the Marble Institute of America; **John H. Stewart,** Canton, Ohio, as president of the Structural Clay Products Institute; **Morton McDonald,** Deland, Fla., as president of the American Title Assn.; **Harold D. Hauf,** head of RPI's department of architecture, as chairman of the Building Research Advisory Board; **Charles A. Rinehimer,** Elgin, Ill., and **C. Albert Carlson,** Minneapolis, Minn., as board chairman and president of the Architectural Woodwork Institute.

Martin P. Durkin, 61, who rose from steamfitter's apprentice to Secretary of Labor, died last month in Washington. Durkin was president of the United Assn. of Journeymen and Apprentices of the Plumbing and Pipefitting Industry (AFL) in 1952 when he was named to the Eisenhower cabinet. Less than eight months later he resigned, charging that Eisenhower had broken a pledge to ask Congress for Taft-Hartley Act changes. As plumbers' union president he was a leader in efforts to weaken the AFL building trades' National Joint Board for the Settlement of Jurisdictional Disputes, preferring to define his union's jurisdiction by contract with employers.

LIFE—*George Skadding*



DURKIN

Mayo



LAZO

Architect **Carlos Lazo,** 40, who became a power in the Mexican government, died last month in a plane crash near Mexico City. A better organizer than drawing board architect, Lazo pulled Mexico's huge University City project out of a morass of bickering and blunders after he took charge of its design and construction. Some who watched him inspire brickmasons and design teams alike to extraordinary effort for the project were convinced he was destined for the Presidency of Mexico. For the past few years he headed the communications ministry, which directs much of Mexico's public works building.

AGC plays no favorites; picks headquarters architect by lot

From a hatful of contenders, the name of Architect Charles O. Matcham was drawn to design a new headquarters building in Los Angeles for the Southern California chapter of the Associated General Contractors of America. Matcham is general chairman for the AIA national convention to be held in Los Angeles next May. Below (l to r): Stuart Ketcham, a member of the chapter's building committee; Carl H. Wittenberg, chapter president; Fred Frandsen, committee chairman, and S. Kenneth Johnson, vice president of AIA's southern California chapter. Now AGC faces another similar dilemma: how to pick a general contractor for the job.

Rothschild



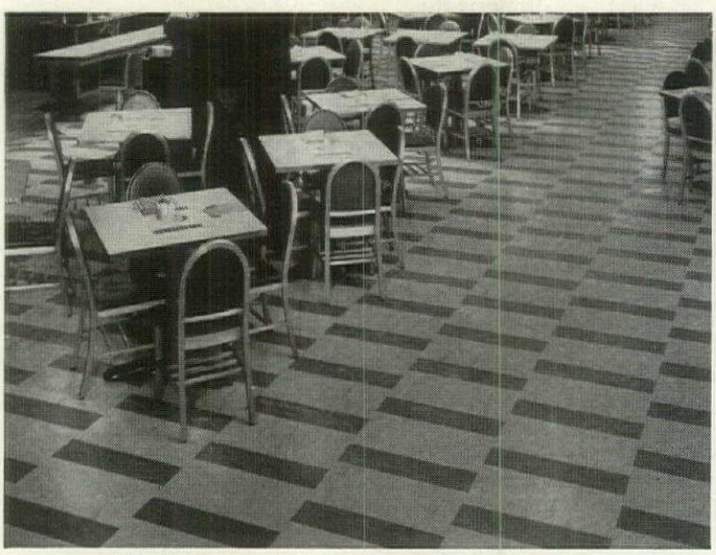
"One Flexachrome Floor Recommends Another!"

says Mr. Harold P. Bock,
General Manager of the Bismarck Hotel





Old Vienna, popular soda fountain in Chicago's Bismarck Hotel . . . with its beautiful, durable, *greaseproof* Flexachrome floor.



Attractive floor design of Flexachrome Vinyl-Asbestos Tile in Bismarck Hotel's newly decorated coffee shop.

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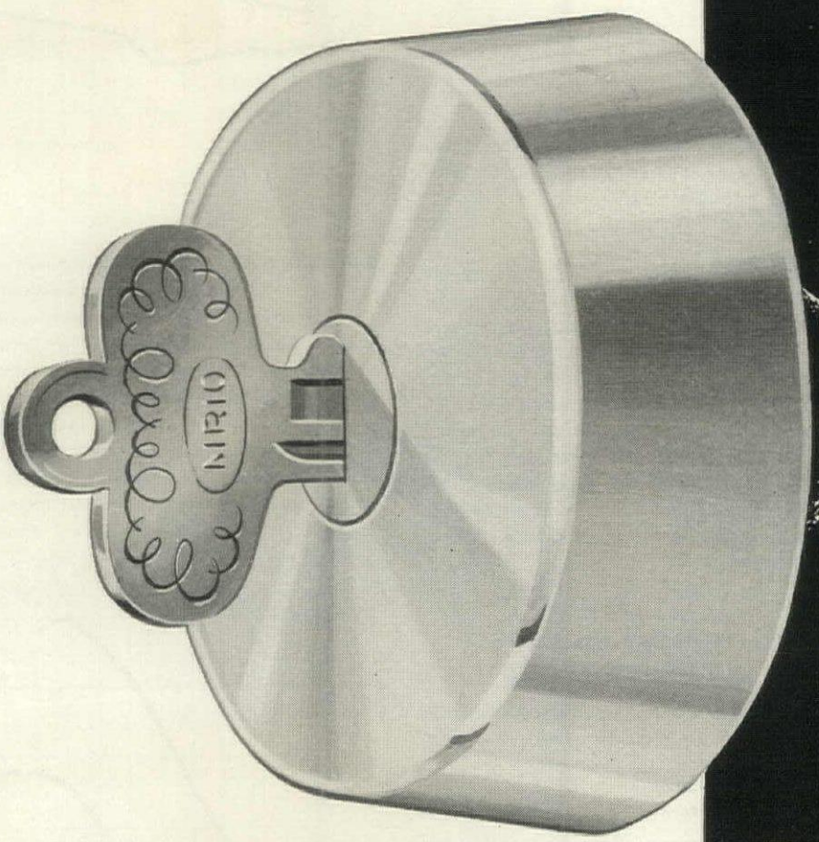
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TRENDS

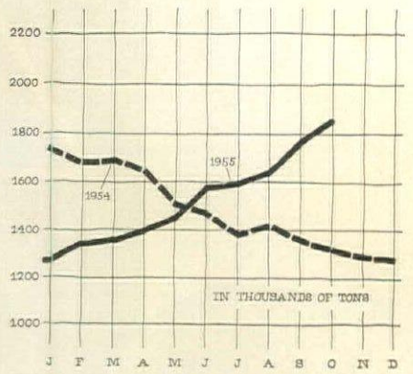
Material prices and building costs level off after upswing; mounting structural steel orders signal many big jobs ahead

Construction business would be an endless pleasure if trends always went the way they did in October.

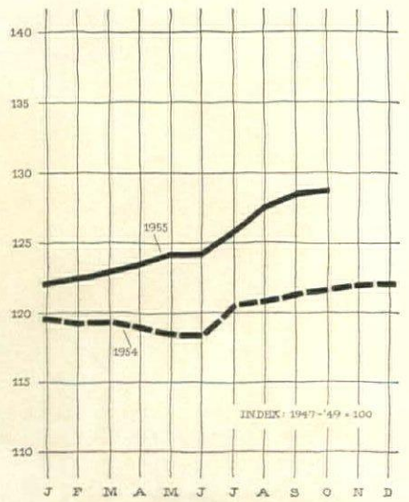
Despite a seasonal dip, construction spending set a record for the month, 11% bigger than in Oct. '54 (chart and table below). At the same time, other key construction conditions also showed considerable improvement: average wholesale building materials prices rose only slightly (chart right); building costs also tended to level off from their steep midyear climb. The national index of E. H. Boeckh & Associates for nonresidential building costs (1926-29 equals 100) moved up from 266.7 in September to 267.3 in October, a gain of only 0.2%.

The most pleasing picture, and greatest relative improvement, was probably that in fabricated structural steel. New orders in September totaled 339,500 tons, sent the Oct. 1 backlog of unfilled orders to 1,853,000 tons (chart right). September's new business was 64% greater than Sept. '54, and boosted orders for the first nine months of this year to 2,673,000 tons, 40% ahead of the same period a year ago. With both new orders and the backlog mounting, this means a growing reservoir of construction jobs ahead.

Structural steel shipments this year have been trailing those in 1954, but in September they rose to 289,128 tons, or 9% better than Sept. '54 shipments. Through May, this year's shipments were 15% behind 1954 shipments, but the gap narrowed to 13% in July, 12% in August, and 11% in September. Through Sept. '55 shipments totaled 2,191,000 tons, compared with an average of 1,689,000 tons for the first nine months of the base years 1947-1950, on the basis of the industrywide data compiled by the American Institute of Steel Construction.

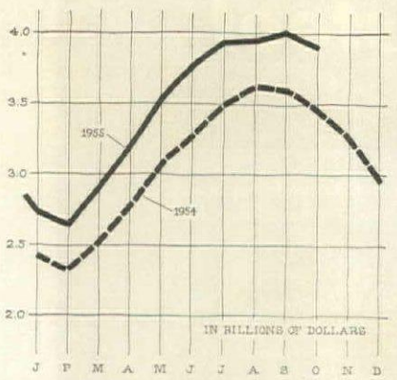


STRUCTURAL STEEL unfilled orders on Oct. 1 rose to 1,853,000 tons, highest since Nov. '53, when they were 1,927,000 tons.



BUILDING MATERIALS PRICES slowed in their upward trend in October, when they advanced to 128.7 on the BLS average wholesale price index, compared with 128.5 in September. Plumbing equipment advanced 1.0 points during the month, and heating equipment 0.1 points, while window glass (accounting for only 1.2 of the index) soared 4.8 points. Helping offset these increases, lumber prices (30.7% of the index) declined 0.2 points, metal doors, sash and trim (5.7% of the index) dropped 0.1 points.

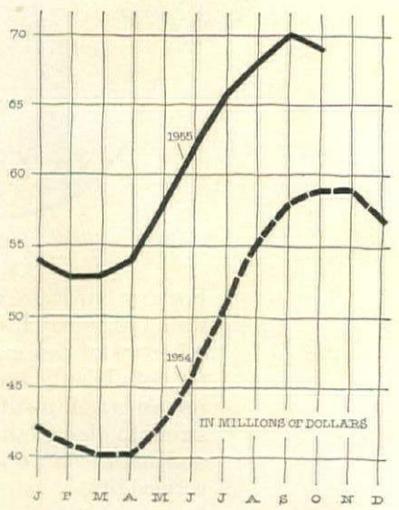
October record for spending set; church outlays up 27%



TOTAL CONSTRUCTION expenditures declined seasonally in October to $3.9 billion, 4% below September, but 11% ahead of the previous October peak set last year, according to the Commerce and Labor Depts. Continuing to expand, private commercial building outlays set another monthly record of $311 million, and private industrial construction expenditures, $220 million. Public construction declined 5% from September to October, entirely in expenditures for state and local projects. Housing starts in October totaled 107,000 or a seasonally adjusted rate of 1,242,000. Expenditures were 5% below September but for Jan. to Oct. were 25% ahead of 1954.

	Oct. '55	First ten months 1955	1954	%±
(millions of dollars)				
PRIVATE BUILDING				
Residential (nonfarm)	1,455	13 732	10,945	+25
Nonresidential*	730	6,239	5,134	+22
Industrial	220	1,945	1,668	+17
Commercial	311	2,486	1,817	+37
Offices lofts; warehouses	105	910	781	+17
Stores; restaurants garages	206	1,576	1,036	+52
Religious	69	608	477	+27
Educational	45	412	436	—6
Hospital; institutions	30	295	279	+6
Public utilities	415	3,726	3 610	+3
*PRIVATE TOTAL.	2,724	25,061	21,147	+19
PUBLIC BUILDING				
Residential	21	218	292	—25
Nonresidential*	351	3,617	3,924	—8
Industrial	42	650	1,300	—50
Educational	212	2,058	1,768	+16
Hospital; institutions	28	285	312	—9
Military	134	1,074	847	+27
Highways	475	3,535	3,216	+10
Sewer; water	97	916	822	+11
*PUBLIC TOTAL..	1,179	10,235	10 009	+2
*GRAND TOTAL ..	3,903	35,296	31,156	+13

* Minor components not shown, so total exceeds sum of parts.



RELIGIOUS BUILDING construction outlays for the first ten months of 1954 totaled $608 million. As the greatest church-building boom in the nation's history rolled on, this was 27% more than outlays during the same period in 1954, and already $15 million ahead of total spending for new churches through all of 1954. For 1956, FORUM has predicted another 20% increase over this year, for a total of $900 million (p. 9), while the Commerce and Labor Depts. forecast total expenditures of $850 million. Estimates for the next ten years run to approximately $7.2 billion for about 70,000 structures, which would average roughly $100,000 each.





"Flexachrome" flooring in Pope's Cafeteria, St. Louis, Mo. (above), and for the First Presbyterian Church Youth Center, Fort Wayne, Ind. (inset), are made of BAKELITE Vinyl Resins by **The Tile-Tex Division,** The Flintkote Company, Chicago Heights, Ill.

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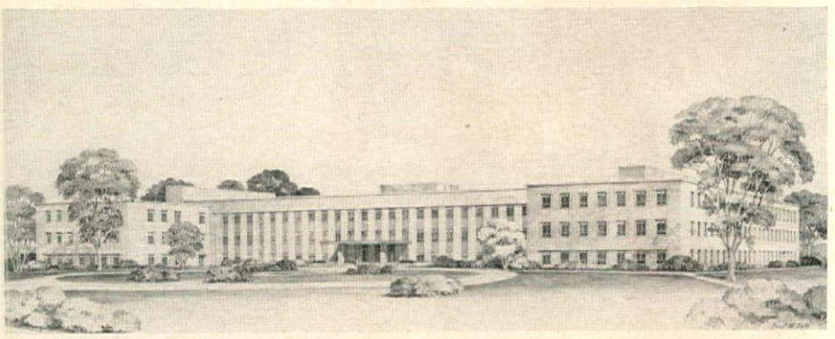
Another National Electric Header Duct Installation

Where built-in electrical availability knocks out future high-cost alterations

National Electric Header Duct will help cut the owners' future operating costs at West Penn Power Company's new office building in Greensburg, Pa. It makes possible easy alterations in office layout by providing complete built-in electrical availability.

The Header Duct raceway system permits easy access to the building's Fenestra cellular steel floor. The result: a combined electrical raceway system that makes possible electrical, telephone and inter-communication outlets wherever and whenever the owner wants them.

Make sure your plans for cellular steel floor construction include a National Electric Header Duct installation. It's the low-cost way to provide for easy, inexpensive changes in office layout without disrupting business routine.



Architect: Hoffman and Crumpton
Electrical Engineer: Carl J. Long
General Contractor: O. H. Martin Associates
Electrical Contractor: H. P. Foley & Company

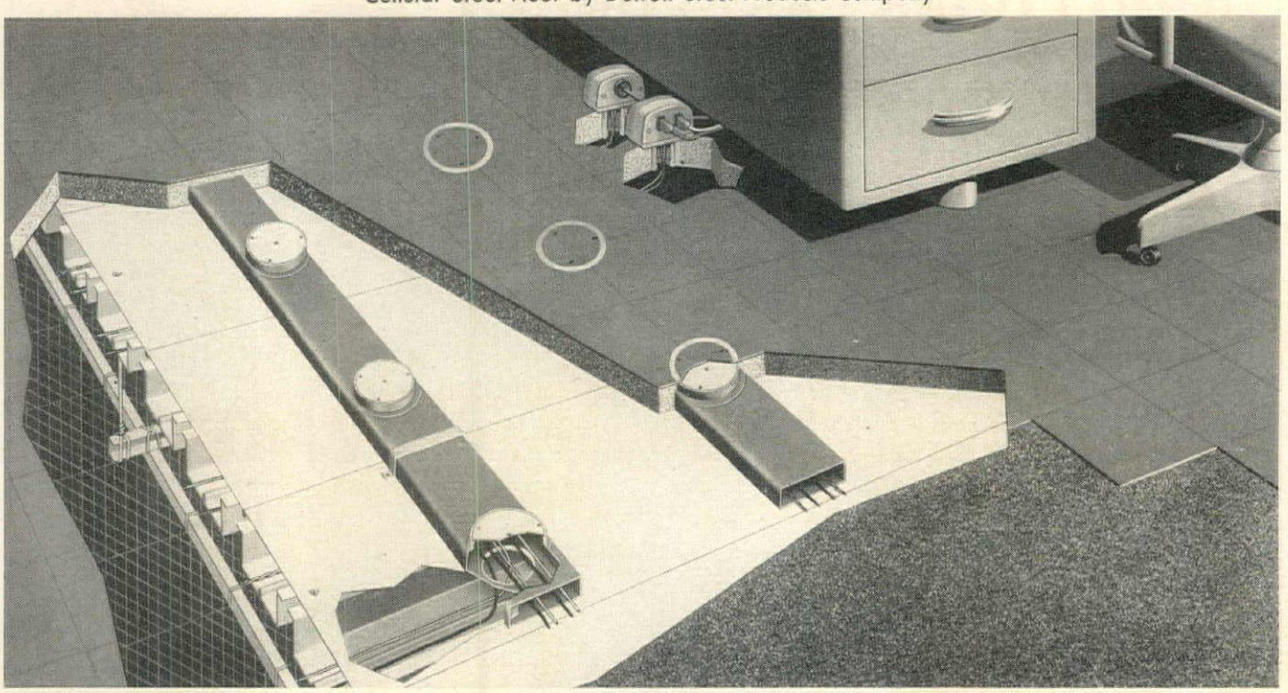
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PITTSBURGH, PA.

NATIONAL ELECTRIC PRODUCTS CORP. PITTSBURGH, PA. 50TH ANNIVERSARY 1905–1955

Cellular Steel Floor by Detroit Steel Products Company





One room enhances another...

through this door

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BRIEF DATA

Glass—3/8" thick Muralex patterned on both surfaces.

Tempered—three to five times stronger than untempered glass of same thickness.

Reversible—can be used right or left hand.

Standard Sizes—2'6" x 6'8" 2' 5 1/16" x 6' 7 1/16"
2'8" x 6'8" 2' 7 1/16" x 6' 7 1/16"
3'0" x 6'8" 2'11 1/16" x 6' 7 1/16"
3'0" x 7'0" 2'11 1/16" x 6'11 1/16"

For more complete information, see the Securit Door insert in Sweet's Architectural File.

Securit Interior Glass Door with panels of Blue Ridge *Satinol** Flutex Glass.
Architect: Welton Becket & Associates, Los Angeles.

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ATTENTION!

Carry out classroom color schemes with this new bulletin board material

4 modern pastel tones

SAGE GREEN - No. 752 • PUEBLO GRAY - No. 754 • CORK TAN - No. 756 • CORAL - No. 758

Now you can put that finishing touch of color on classroom walls with complete assurance of decorative harmony. One of the four modern shades of Armstrong Tackboard will harmonize with any of the lighter, brighter interiors featured in today's classrooms.

Armstrong Tackboard colors go all the way through—never fade or wear off. And because its finely textured surface has relatively high light reflectance, Armstrong Tackboard actually helps reduce eyestrain and nervous fatigue.

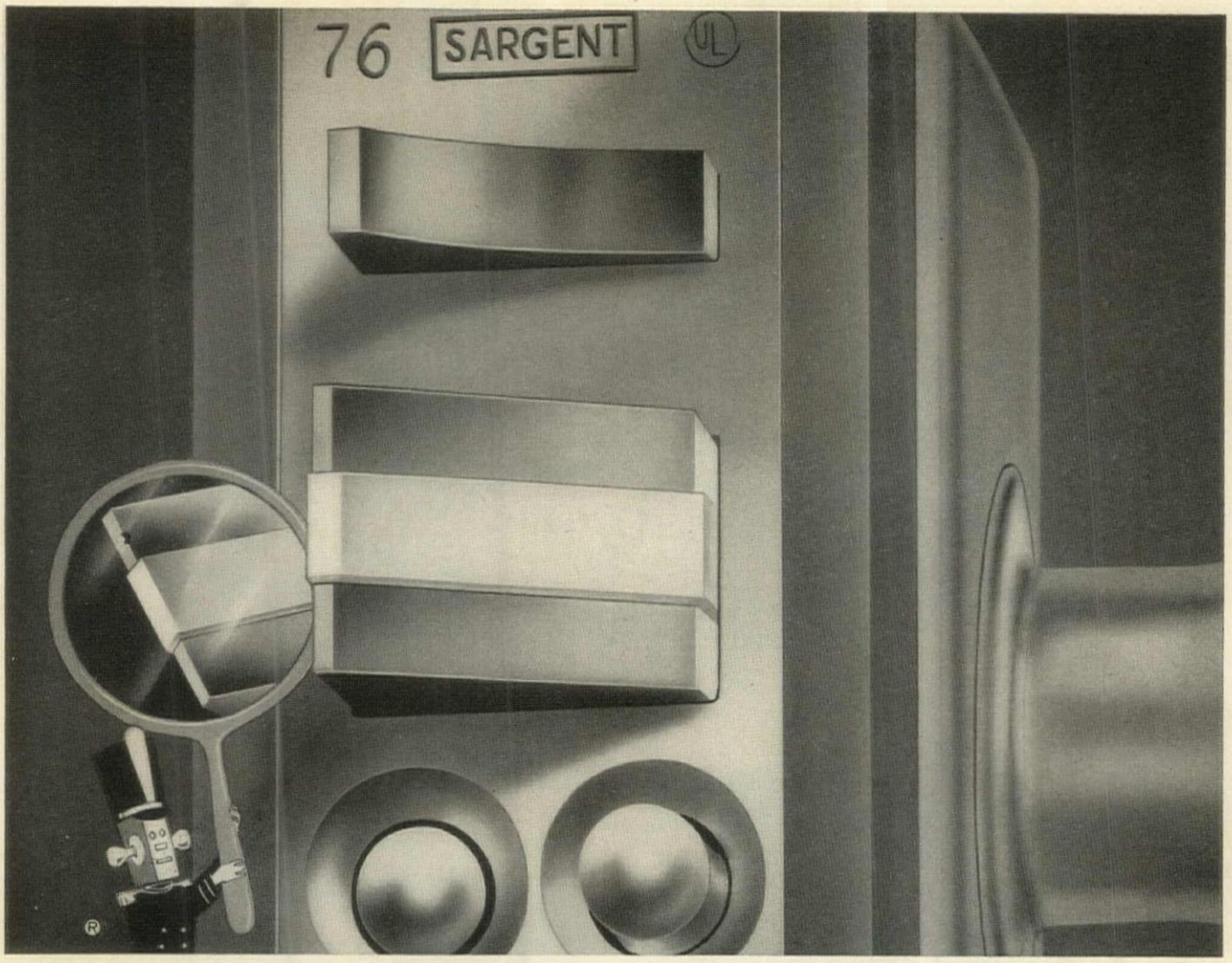
This new resilient cork material will take years of daily use without need for paint or other surface finish. It's easy to clean, too. Most soil spots come right off with a soft eraser. Mild soap and water make the whole surface look like new.

Armstrong Tackboard is stocked by leading school supply houses everywhere. It comes in ⅛" and ¼" gauges, 48 or 72 inches wide. For added convenience, bulletin boards up to 85 feet long can be installed in one piece.

Write for samples of Armstrong Tackboard to Armstrong Cork Company, Industrial Division, 8312 Drake Street, Lancaster, Penna. Ask for a copy of our new full-color folder, too.

Armstrong

TACKBOARD



See how the Nylon insert goes all the way around the latch bolt! Projects slightly above the metal to absorb all the latching punishment.

Now... the Perfect Latch Bolt with a

MOLDED NYLON INSERT!

Gives quieter, easier operation! Shows no sign of wear even after a million closings! Yet it sells for no extra cost!

The new Sargent Latch Bolt... with its truly amazing Nylon insert... is a further improvement for the world's finest lock. The Sargent Integralock.

This Nylon insert greatly reduces friction of the latch bolt on strike areas... and on lock front areas, too.

It enables a door to be closed with 35% less force than a solid metal latch bolt. This reduced closing resistance permits the slowest adjustment of door closers. It makes door closing noiseless. Desirable in all buildings. Especially appreciated in hospitals.

It shows no appreciable wear after *one million* test cycles. Its smooth, self-lubricating surface prevents marring of strike plate. An important appearance feature.

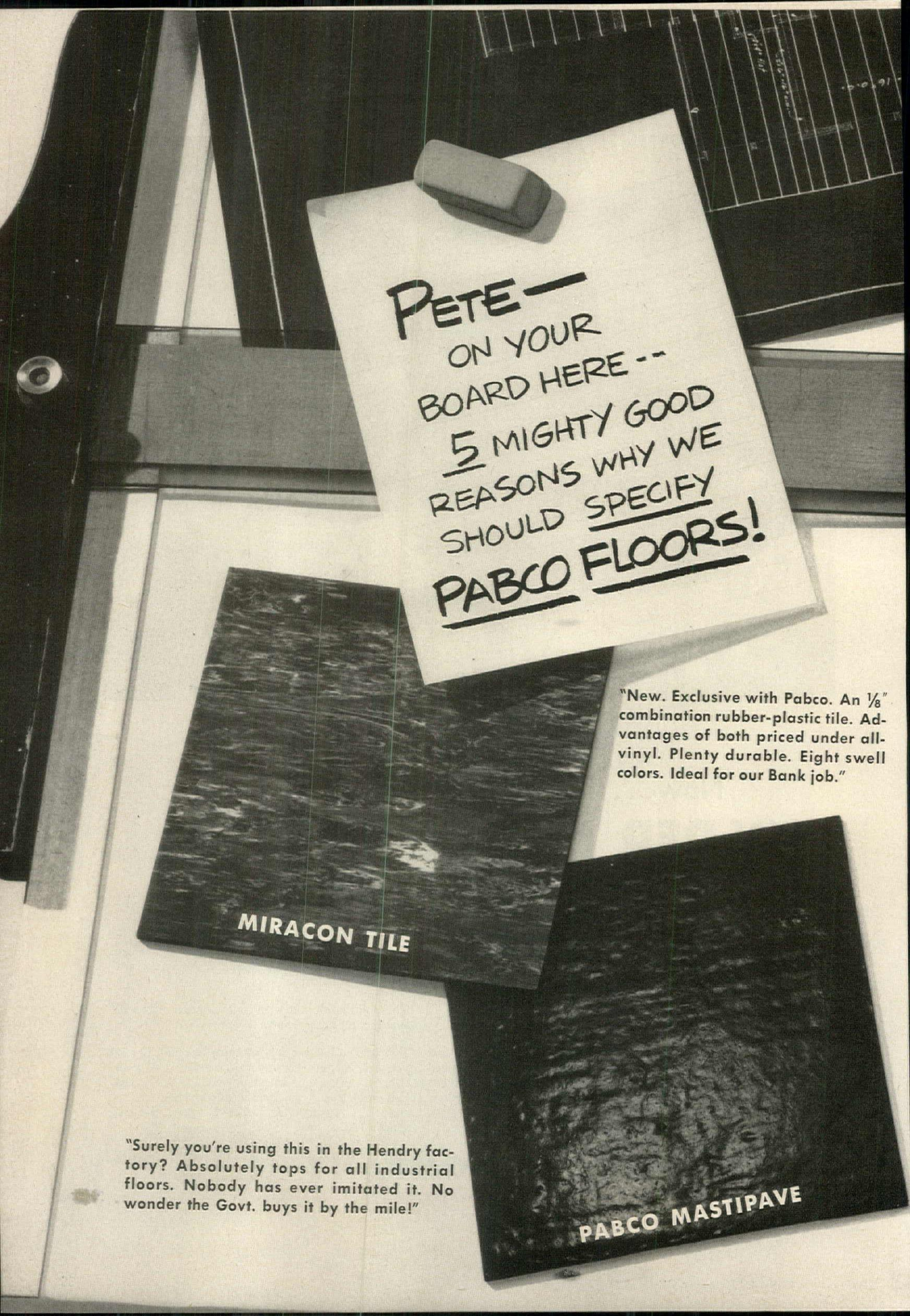
This solid latch bolt with its Nylon insert has no small, complicated parts to break.

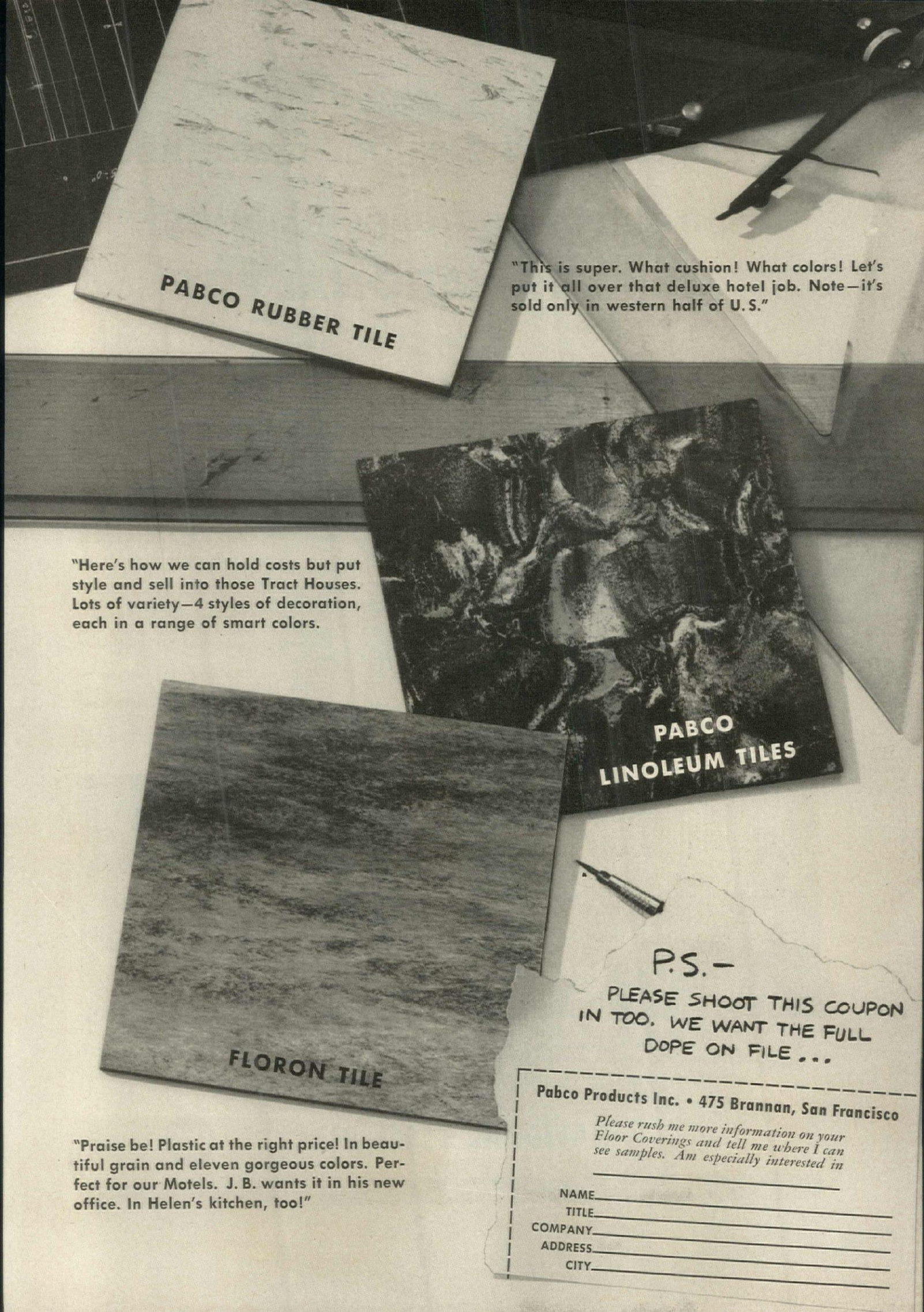
Yet with all these advantages, Sargent brings you this Nylon insert at *no extra cost!* Ask your Sargent salesman to show you the Sargent Integralock... with its sensational new Nylon insert... today. Or write Sargent direct, Dept. 8-M.

SARGENT & COMPANY

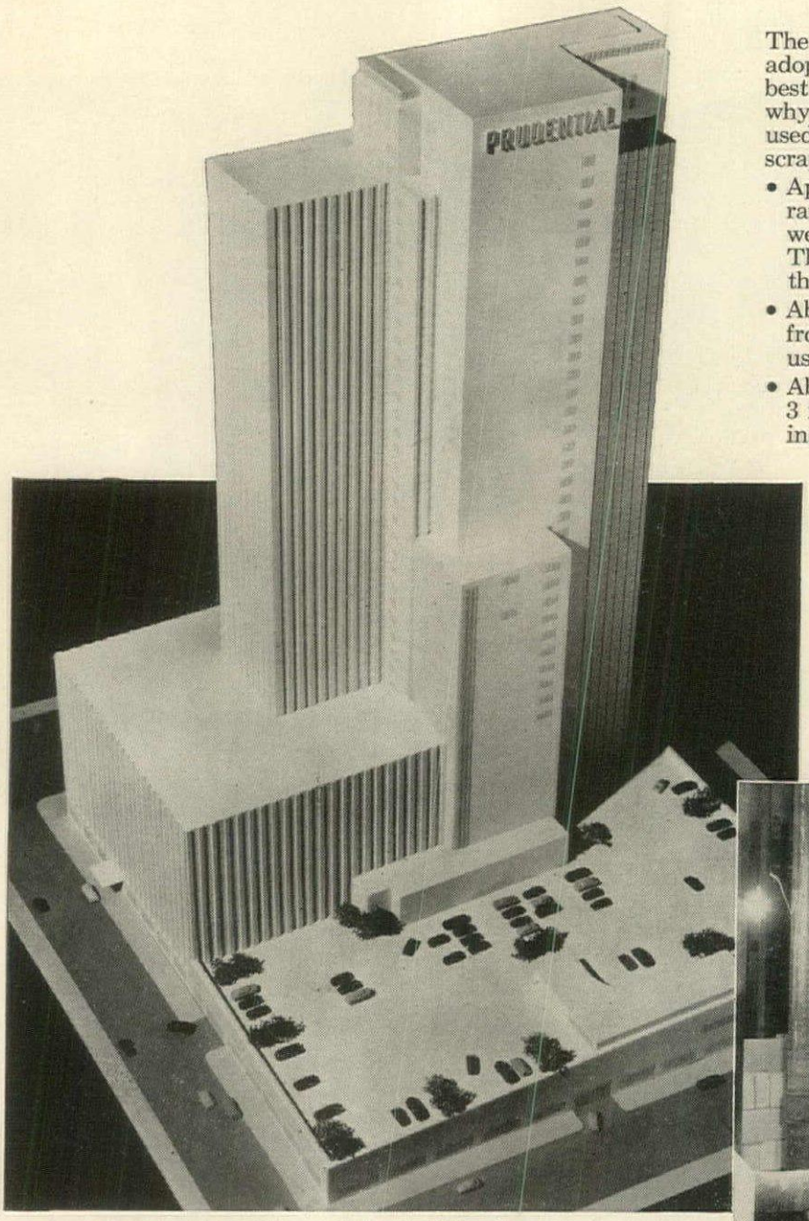
New York · NEW HAVEN, CONN. · Chicago

SARGENT of New Haven


PETE—
ON YOUR
BOARD HERE--
5 MIGHTY GOOD
REASONS WHY WE
SHOULD SPECIFY
PABCO FLOORS!
"New. Exclusive with Pabco. An 1/8" combination rubber-plastic tile. Advantages of both priced under all-vinyl. Plenty durable. Eight swell colors. Ideal for our Bank job."
MIRACON TILE
"Surely you're using this in the Hendry factory? Absolutely tops for all industrial floors. Nobody has ever imitated it. No wonder the Govt. buys it by the mile!"
PABCO MASTIPAVE


PABCO RUBBER TILE
"This is super. What cushion! What colors! Let's put it all over that deluxe hotel job. Note—it's sold only in western half of U.S."
"Here's how we can hold costs but put style and sell into those Tract Houses. Lots of variety—4 styles of decoration, each in a range of smart colors.
PABCO LINOLEUM TILES
FLORON TILE
"Praise be! Plastic at the right price! In beautiful grain and eleven gorgeous colors. Perfect for our Motels. J. B. wants it in his new office. In Helen's kitchen, too!"
P.S.—
PLEASE SHOOT THIS COUPON IN TOO. WE WANT THE FULL DOPE ON FILE...
Pabco Products Inc. • 475 Brannan, San Francisco
Please rush me more information on your Floor Coverings and tell me where I can see samples. Am especially interested in
NAME
TITLE
COMPANY
ADDRESS
CITY

Prudential "takes out insurance" on safety and dependability with USS NATIONAL PIPE

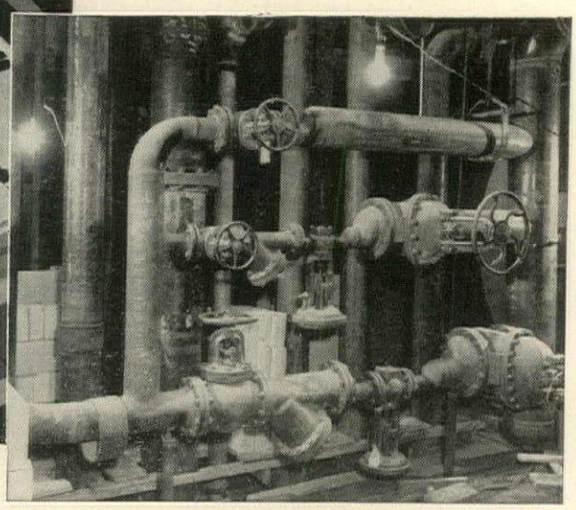


The Prudential Insurance Company of America adopted the policy of installing nothing but the best in their new Chicago office building. That's why almost 200 tons of National Steel Pipe were used in the construction of the ultra-modern sky-scraper. Here's how the material was used:

- Approximately 120 tons of National Seamless, ranging in diameter from 6 inches to 20 inches, were employed as air conditioning carriers. These "risers" run from the sub-basement to the top floors.
- About 42 tons of National Seamless, ranging from 2 inches to 14 inches in diameter were used for heating and fan rooms.
- About 20 tons of National Pipe, from 1 inch to 3 inches in diameter, help make up the building's plumbing system.

It's no surprise that National Pipe is used in so many of the "big jobs" across the country. Engineers know from past experience that they can depend on National for safe, efficient, trouble-free service.

Write us for further information on the use of National Pipe in air conditioning, heating, and power installations. And, if you'd like some personal assistance with your pipe problems, get in touch with our engineers.



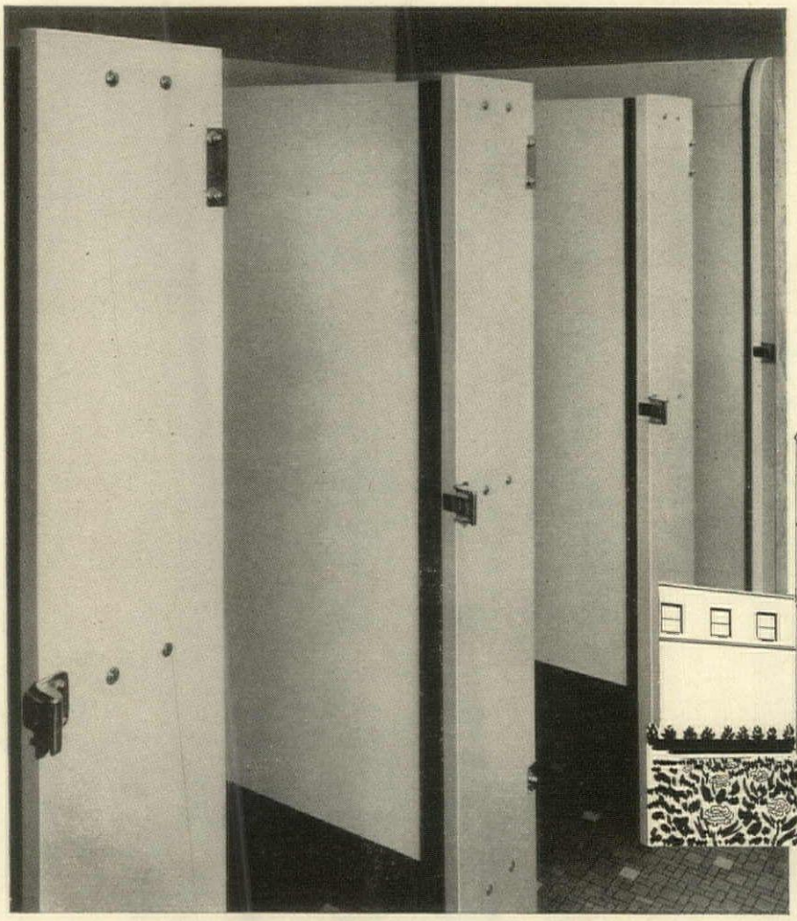
Prudential Building, Chicago, Illinois
ARCHITECT AND ENGINEER: Naess and Murphy, Chicago
GENERAL CONTRACTOR: George A. Fuller Co., Chicago

NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

NATIONAL STEEL PIPE

USS

UNITED STATES STEEL



Union Passenger Terminal

This recently completed railroad station at New Orleans, La., was designed by Architects Wogan & Bernard, Jules de la Vergne and August Perez and Associates; all of New Orleans, La.



Washrooms of another notable building finished in Carrara Glass

● Carrara® Structural Glass has many outstanding, distinctive qualities which make it first choice with important architects who are called upon to design America's leading buildings. This is especially true when the selection of a finishing material for washroom walls, stiles and partitions is involved.

Carrara Structural Glass is all pure glass with a smooth, even surface that is highly impervious to attack by steam, water, acids and cleaning compounds. Its gleaming finish, mechanically ground and polished to a high degree of lustre, will retain its beauty indefinitely, through many years of service, countless cleanings. It cannot check, craze, stain or fade; it will not absorb odors.

Carrara Structural Glass is easy to clean and keep clean. An occasional wiping with a damp cloth keeps it fresh and sparkling. And since Carrara is made in large sections, there are fewer joint crevices to catch dust and dirt.

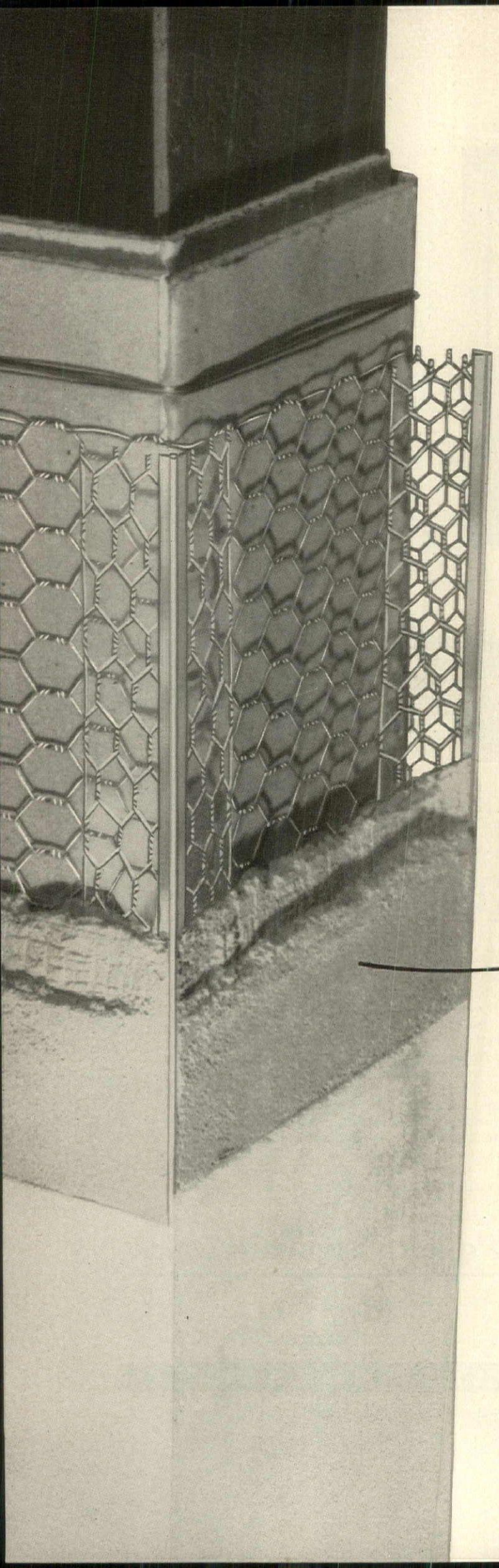
For more information about this versatile material —its unique beauty, its wide application possibilities, and its ten glowing colors — write Pittsburgh Plate Glass Company, Dept. 5426, 632 Fort Duquesne Boulevard, Pittsburgh 22, Pennsylvania.

Carrara ... the quality structural glass

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PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

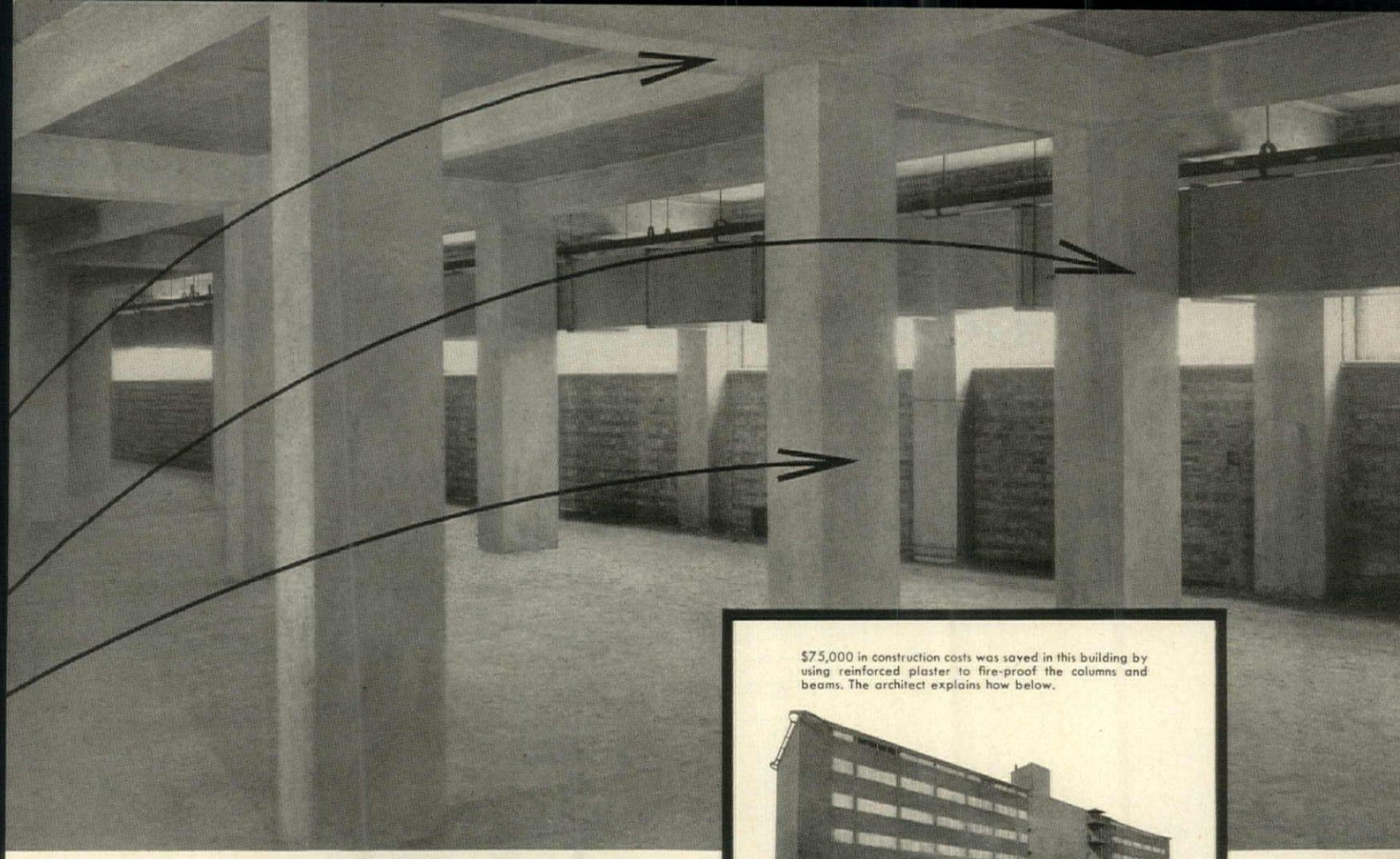


reinforced
plaster

cut costs 30%

for column and beam
fire-proofing

- less weight
- no forms
- fewer piles
- easier conduit installation
- quality finish
- saves space



$75,000 in construction costs was saved in this building by using reinforced plaster to fire-proof the columns and beams. The architect explains how below.

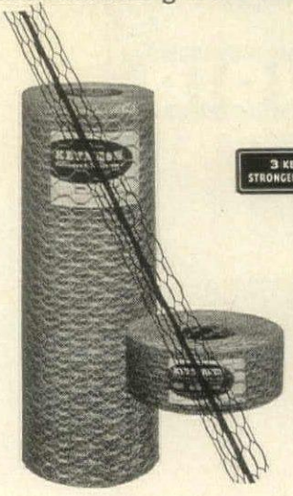
Column and beams with reinforced plaster fire-proofing.
East Dentistry-Medicine-Pharmacy Building—University of Illinois, Chicago
Architects—Pace Associates
General Contractor—Sumner Sollitt Company
Plastering Contractor—McNulty Bros. Company

Pace Associates tell why they specified LATH AND REINFORCED PLASTER FIRE-PROOFING

"Seven years ago when this building was in the preliminary design stage, we had faith in plaster fire-proofing, but only a few fire tests had been made. We knew that if we could find a simple plaster construction that would pass code ratings, we could produce this $7-million structure for about $75,000 less than we could with concrete fireproofing. This saving represents 31 cents per square foot of gross floor area resulting from the reduction of steel tonnage, piles, yardage of concrete and omission of forms. This rough plaster fireproofing, which is concealed behind finished walls and ceilings, cost about 70 cents per square foot,* or about 30 cents less than the cost of column and beam forms. Many fire tests of plaster coverings have been made in recent years and we are sure that plaster will have a long and active future in the protection of steel structures."

W. H. Binford, Pace Associates, Chicago
Planners–Architects–Consulting Engineers

*Job contracted Feb. 1952. Costs subject to change according to local conditions.





Specify Keymesh for the finest, most economical reinforced plaster fireproofing . . . Architects and contractors everywhere are finding Keymesh the most economical reinforcement for all types of plastering. It's the heart of Keystone's 3 Keys to strong plaster—Keymesh, Keycorner and Keybead. These three products guard against cracking and make stronger corners, joints and junctures. Make your structures better at less cost—specify Keystone's 3 Keys. Write Keystone Steel and Wire Company for complete details.

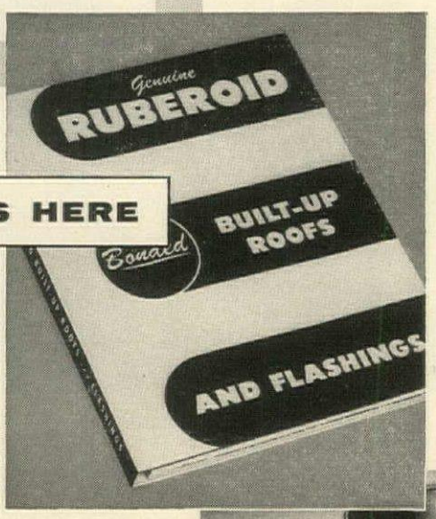
KEYSTONE STEEL & WIRE COMPANY

Peoria 7, Illinois

KEYMESH • KEYBEAD • KEYCORNER • KEYSTONE NAILS
KEYSTONE TIE WIRE • KEYSTONE WELDED WIRE FABRIC
KEYSTONE NON-CLIMBABLE AND ORNAMENTAL FENCE

see our CATALOG in SWEET'S FILE
FILES 2d Ke | 11a Ke | 3d Ke

DEPENDABLE BUILT-UP ROOFING...



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You get dependable built-up roofing every time when you select all three—the right Ruberoid specification, Ruberoid quality materials and application by a Ruberoid Approved Roofer. That's why Ruberoid Built-Up Roofings have been making satisfied customers continuously since 1892.

1. The Ruberoid Built-Up Roofing Specification Book is your best guide to the proper type of roofing for any building. (If you don't have a copy, write today for this easy-to-use reference manual.)

2. Ruberoid built-up roofing materials have been quality leaders in the industry for over 60 years.

3. Ruberoid Approved Roofers have the job-tested experience that means your assurance of the best application of any built-up roof specification.

For assured built-up roofing performance and customer satisfaction use the combination of tested Ruberoid specifications and materials plus the know-how of a competent Ruberoid Approved Roofer.

AND HERE



AND HERE

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RUBEROID
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Asphalt and Asbestos Building Materials

see our catalog in S or write for copy

where flooding sunlight sets new tasks for piping

LEVER HOUSE

shades operating costs with JENKINS VALVES



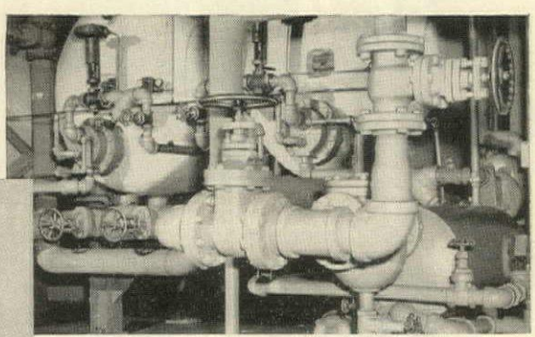
Architects: SKIDMORE, OWINGS AND MERRILL
Mechanical Engineers: JAROS, BAUM AND BOLLES
General Contractors: GEORGE A. FULLER CO.
Heating and Air Conditioning Contractors: KERBY SAUNDERS, INC.
Plumbing Contractor: GILLMAN-ROUS-PESCE CORP.

Where such extensive use of glass permits direct penetration of sun heat along with sunlight, interior comfort is largely dependent upon efficient, year-round air conditioning. At Lever House, for example, a high velocity duct system, served by two steam turbine centrifugal compressors, supplies 700 tons of refrigeration for three separate air-conditioning zones. Individual window units cool or heat the periphery of each floor as required. Air from such areas re-enters the ducts, is blended and discharged through centrally located ceiling diffusers, keeping temperatures in balance over the entire floor.

The serious consequences of failures and interruption of such facilities required careful selection of all components on the basis of proved dependability, safety, and long-range maintenance economy. Jenkins Valves were chosen after thorough study of performance records in all types of service.

Jenkins Valves are being specified for more and more of the news-making structures that are pacing the advance in architectural design. It is a repeated expression of confidence in their *extra measure* of efficiency and economy.

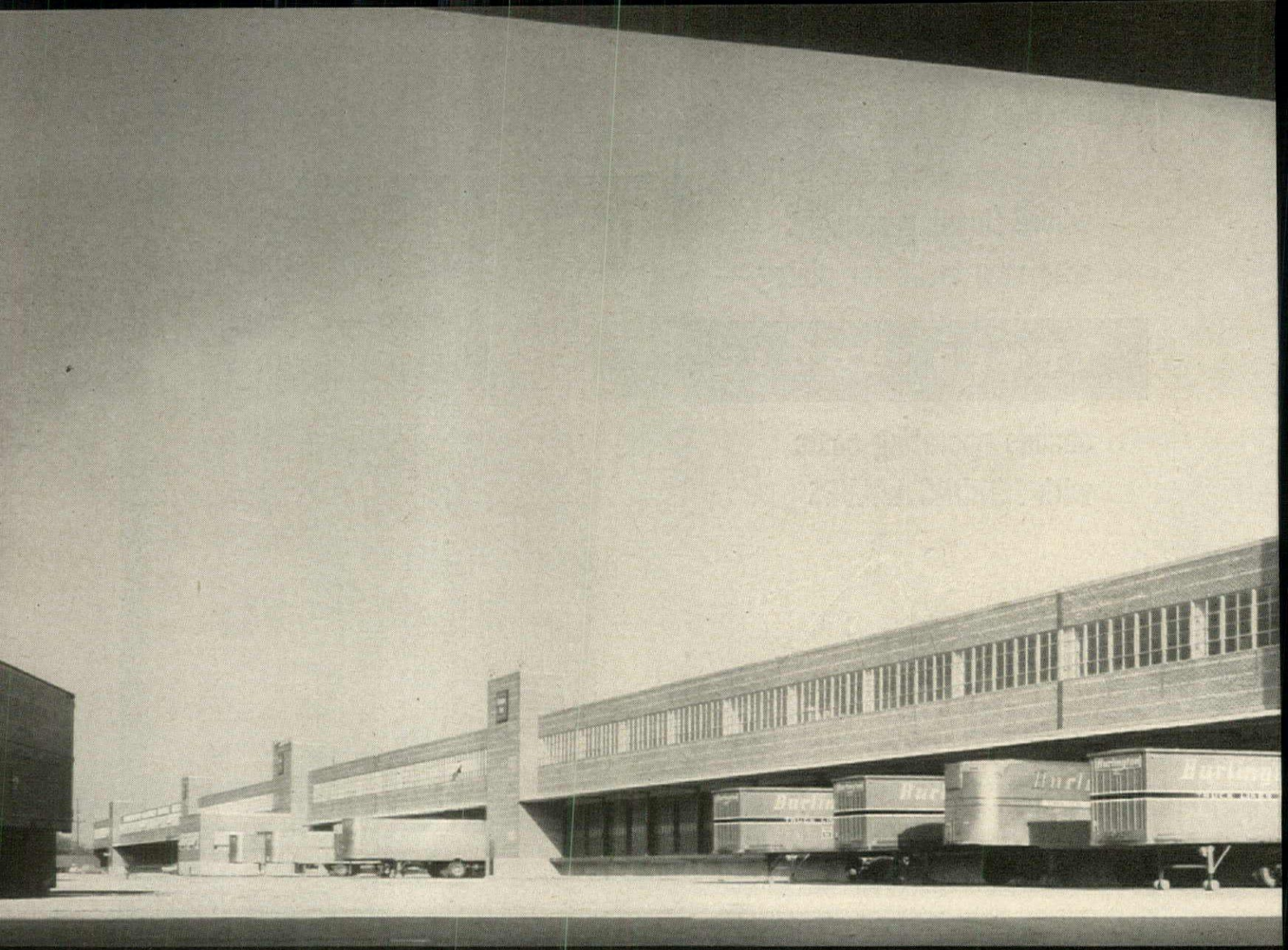
Despite this extra value, *you pay no more* for Jenkins Valves. For new installations, for all replacements, let the Jenkins Diamond be your guide to lasting valve economy. Jenkins Bros., 100 Park Ave., New York 17.



Among nearly 3000 Jenkins Valves, controlling all lines, are these Iron Body Gate Valves on steam condensate lines of hot water system.

JENKINS
LOOK FOR THE DIAMOND MARK
VALVES
SINCE 1864 TRADE JENKINS MARK
Jenkins Bros

SOLD THROUGH LEADING INDUSTRIAL DISTRIBUTORS EVERYWHERE



One of the longest buildings with continuous windows in the U. S. A. — the Burlington Freight Terminal. Ceco-Sterling Aluminum Windows were used throughout. Architects and Engineers: Shaw, Metz & Dolio / Contractor E. H. Marhoefer

How borrowed daylight illuminates a giant freight terminal



CECO STEEL



Ceco-Sterling Aluminum Projected Windows provide a modern office feeling with abundant natural daylighting.



This illustrates the way office areas were partitioned with Ceco Steel Borrowed-Lights, thus introducing natural daylight into central areas.

Ceco standard Windows, Borrowed-Lights and Doors are combined for better vision in Burlington freight building

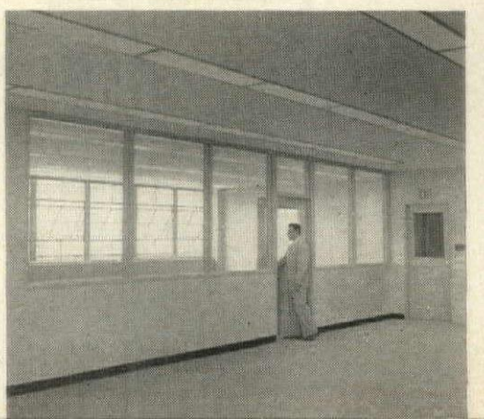
Bringing daylight into a building through windows and then introducing it into central areas through glazed doors and borrowed-lights is smart basic planning . . . especially when it is done with Ceco *standardized* engineered products. And that's what Shaw, Metz & Dolio did when they designed the Burlington Route's new giant freight terminal in Cicero, Illinois. Maximum light is brought inside through a ribbon of Ceco Aluminum Projected Windows — large glass lights — easy to clean — no maintenance problems. Inside, the daylight is borrowed for corridors and central areas through glazed Hollow-Metal Doors, Transom Frames and Borrowed-Lights, all Ceco-engineered for *economical unit installation*, all factory fabricated for *low first cost*. Ceco Engineers went a step further. They proved Ceco Standardized Door Hardware eliminates extra labor costs — ready for installation when delivered — no on-the-job fitting. Ceco also supplied Concrete Reinforcing Bars and Welded Wire Fabric, delivered to meet the contractor's schedule. Through working with Ceco, better coordination of effort was achieved — time was saved. On your next job call Ceco Engineers. Chances are they can save you time and money . . . help you realize better building.

CECO STEEL PRODUCTS CORPORATION

Offices, warehouses and fabricating plants in principal cities.

General Offices: 5601 W. 26th St. Chicago 50, Ill

Ceco Hollow-Metal Doors are used throughout the building, in borrowed-light partitions and in separate openings, as shown in these two pictures.

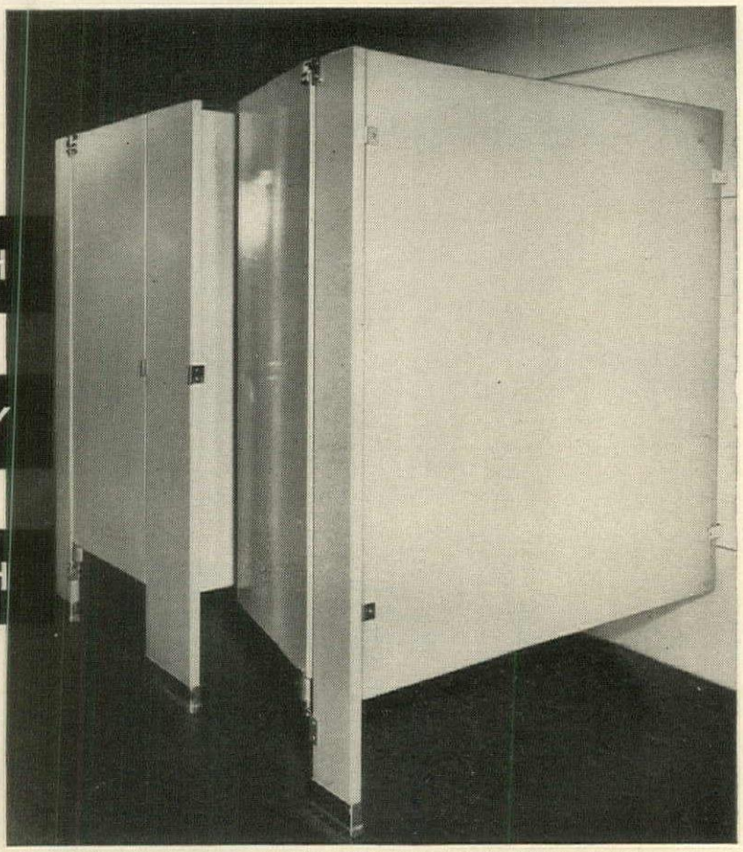


IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

STRENGTH

DURABILITY

FINISH



Nicholson Type A Toilet Compartment. Floor-braced. Four other types available in any of ten colors.

Nicholson Metal Partitions—

built to stand up . . . built to stand out

Toilet compartments may sometimes *look* alike—at first glance. But just check *details* and you'll see why Nicholsons' stand out. They don't merely meet specifications—they surpass them! The important Nicholson extras are what count.

- Full 20 gauge, 1" thick panels and doors—1¼" 16 gauge pilasters.
- Full 18 gauge drawn moulding—won't bend or dent in shipment and installation.
- Tops in finish—zinc chromate primer over galvanized bonderized steel; two coats of synthetic baked enamel.
- Patented sanitary floor and ceiling pilaster supports.
- Cast brass, chrome over nickel, hardware. Positive, unbreakable, adjustable gravity hinge—cam an integral part of barrel. Modern design in every detail.
- Individually packed panels—carton can be used as protective cover after installation.

Specify the compartments that will still stand out—after years of rugged use. Specify Nicholson.

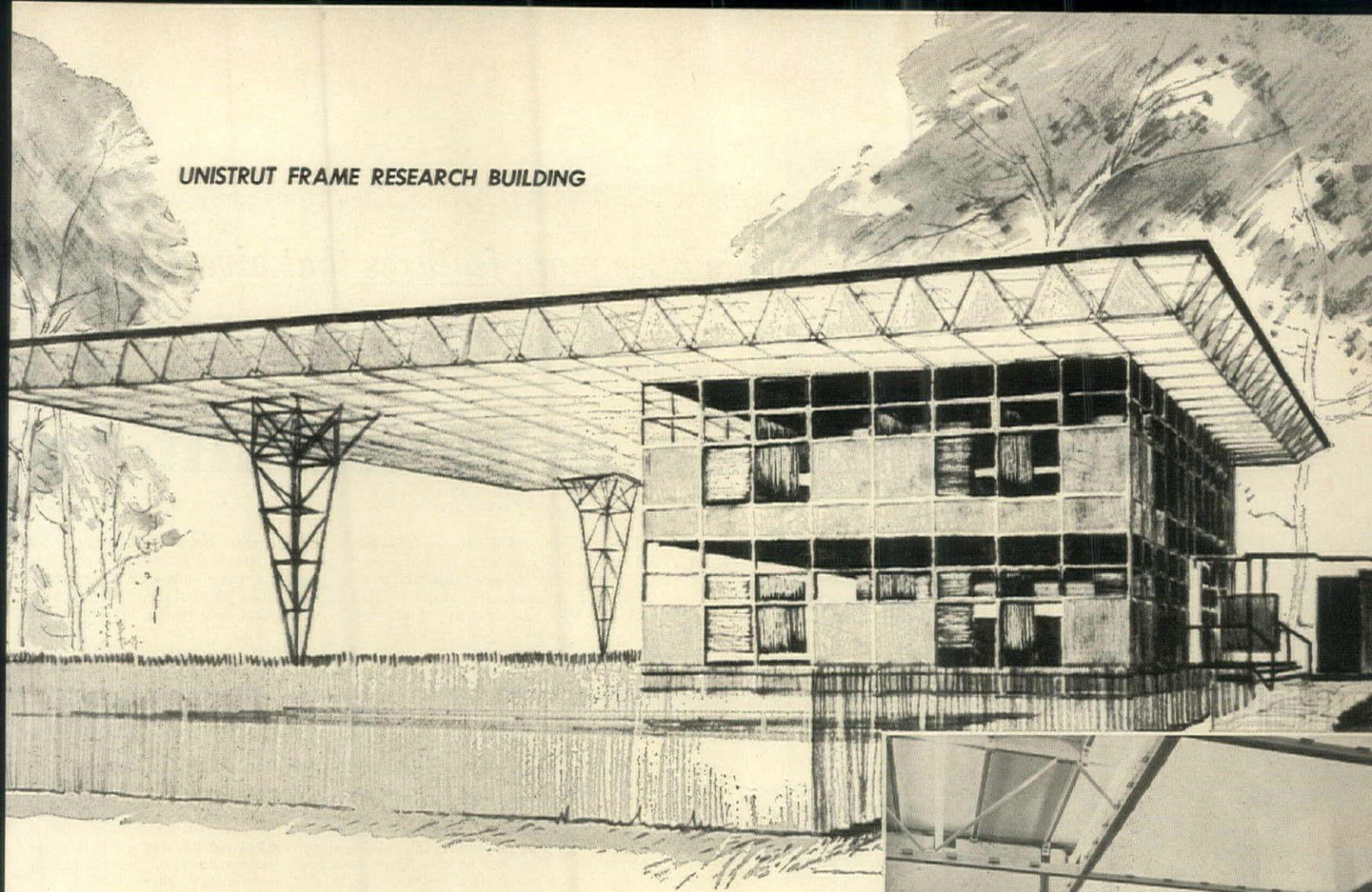
• *Available in the following types—and wide selection of colors*
Type A—floor braced • Type AC—ceiling hung • Type AR—overhead braced • Type B—flush type • Type BP—panel type

NICHOLSON

W. H. NICHOLSON and Company

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CEILING IN SPACE FRAME STRUCTURE FEATURES TRANSLUCENT PANELS OF EXTRUDED LUCITE®

Two-story research laboratory at Ann Arbor embodies new concept in design



A STUDENT in the College of Architecture and Design installing a 4′x 4′ translucent panel of "Lucite" acrylic resin. The experimental laboratory consists of an enclosed area, 33 by 49 feet beneath a 70- by 90-foot roof. The drafting area on the lower level of the enclosed area uses a ceiling of Du Pont "Lucite" acrylic resin for transmitting optimum light without glare.

"Durable, flexible, expandable, demountable and reusable." That's one professor's description of the new research laboratory at the University of Michigan. The Unistrut Space Frame System introduces a third dimension of reinforcement—diagonal struts to distribute stress in three directions. As a result, supporting columns are needed only at widely spaced intervals and interior walls carry none of the roof load.

The walls, ceiling, and roof utilize many 4′x 4′ translucent and transparent panels. For example, on the lower level under the north mezzanine the ceiling is constructed of Du Pont "Lucite" acrylic resin. These modular units of "Lucite" were extruded by Gering Products, Inc., of Kenilworth, New Jersey. They transmit all wave lengths of visible light, are glare-free. Panels of "Lucite" are exceptionally strong and can withstand direct and prolonged exposure to sunlight and weathering without discoloring or crazing.

"Lucite" permits unusual decorative effects. It comes in a wide variety of transparent and translucent colors. Extruded "Lucite" can be fabricated into troffer-type panels and corrugated shapes to meet any custom design specifications.

For further information on extruded "Lucite" acrylic resin—its properties and uses as a lighting material—write to E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 2912 Du Pont Building, Wilmington 98, Delaware. In Canada: Du Pont Company of Canada Limited, P. O. Box 660, Montreal, Quebec.

Good Lighting Is Good Business

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

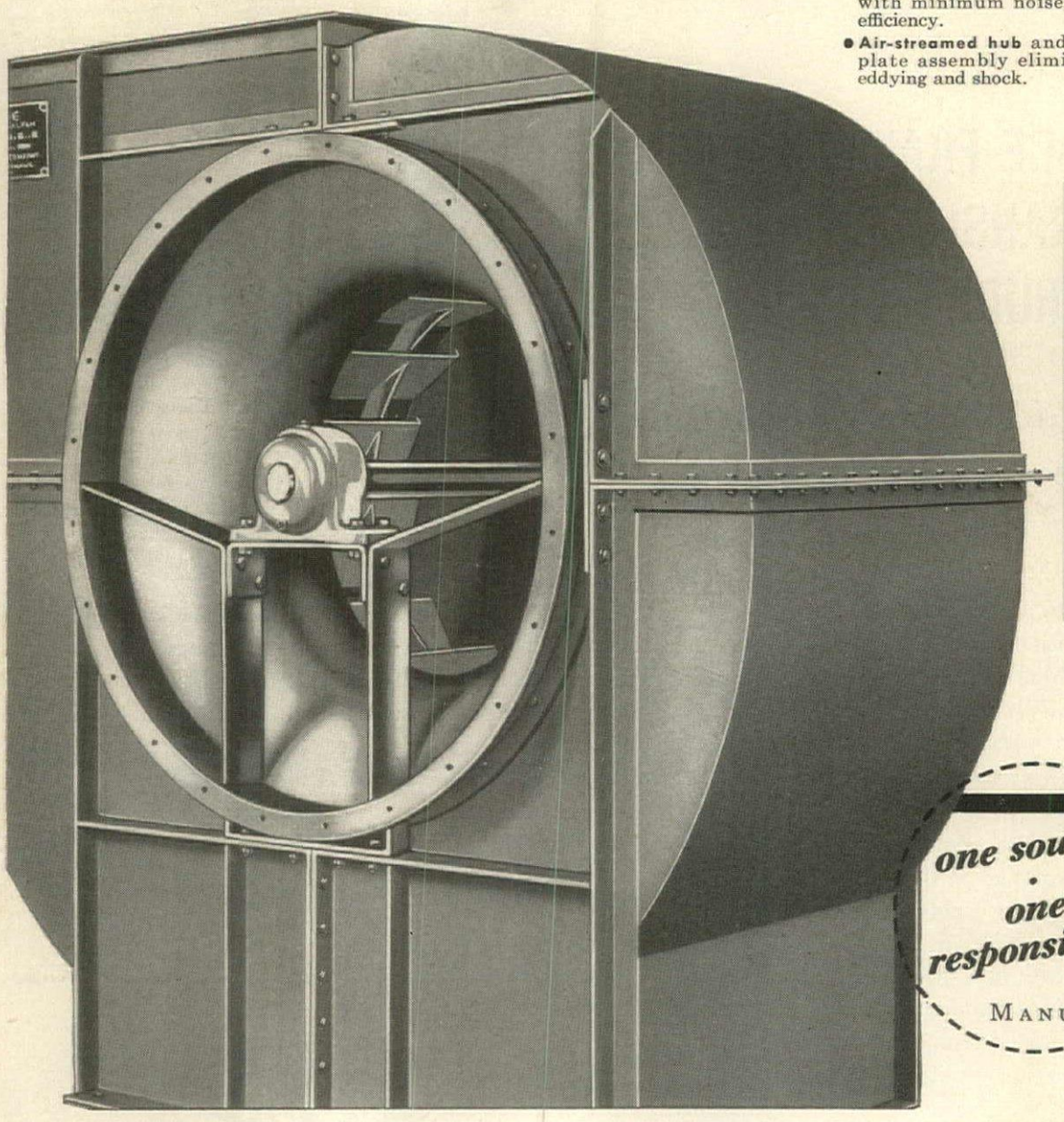
Trane Fans and Coils have more features that give you

Greater efficiency . . . compactness in your built-up

Handle bigger jobs with more compact equipment . . . get greater reliability, too!

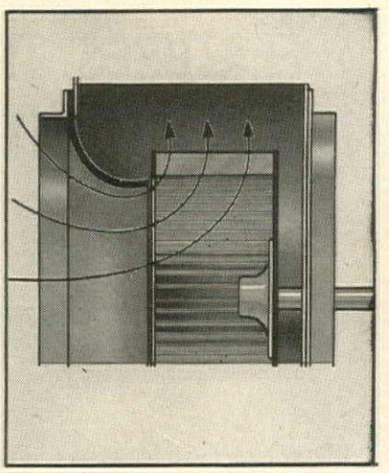
The efficiency features of TRANE Fans and Coils can make a *big* difference in your built-up systems! For example, the TRANE Delta-Flo Fin and mechanical fin-to-tube bond not only give you a more *efficient* coil, but actually form a stronger, more rigid unit than heretofore possible. And even that is only part of the story.

TRANE Centrifugal Fans available in BI types in all sizes through 109", FC types through 89". Utility fans 4" through 30". Propeller fans 10" through 48".



Compare Trane with any other fans

- **True non-overloading** power characteristics, moderate rotative speeds.
- **Special housing** and outlet shapes handle large volumes with minimum noise, high efficiency.
- **Air-streamed hub** and back plate assembly eliminates eddying and shock.
- **Fan wheel balanced** dynamically and statically with electronic balancing equipment.
- **Rugged housing** of lock-seam construction (small fans), welded construction (large fans) resists damage.
- **Proved performance** backed by over a quarter of a century of fan building experience.



Streamlined inlet cone distributes air evenly in fan wheel without noisy turbulence. Permits fan to operate at high efficiency with low noise level.

one source • one responsibility

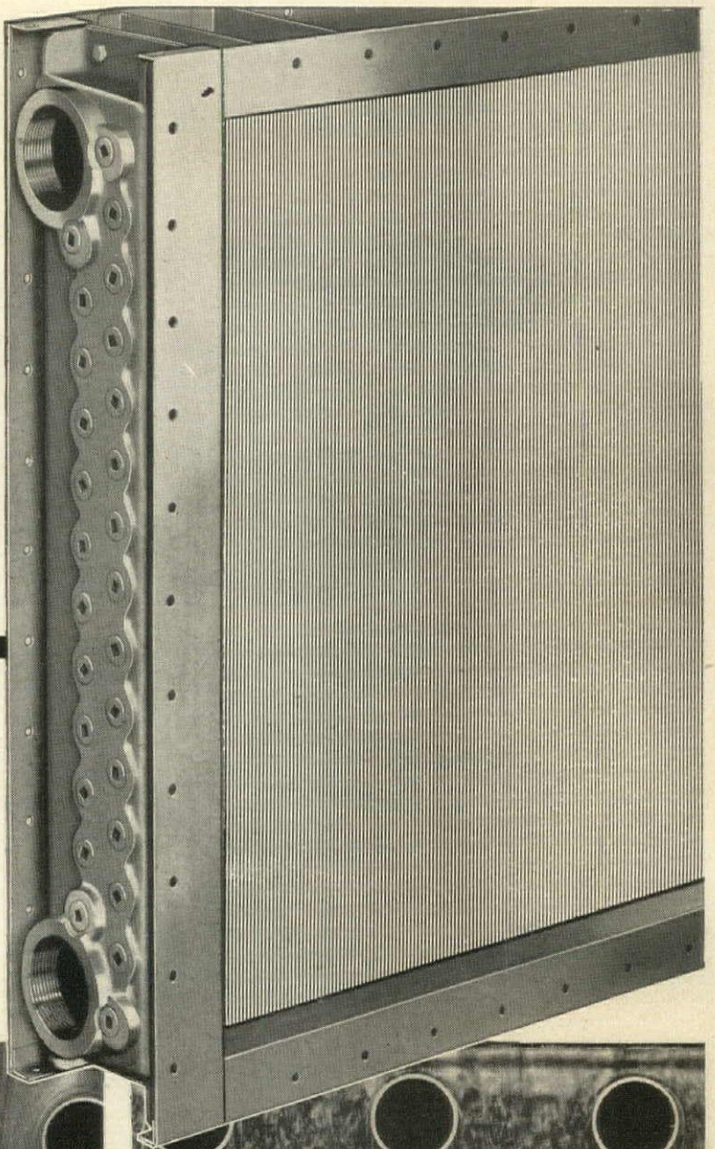
Install

MANUFACTURING ENGINEERS

The Trane Company,

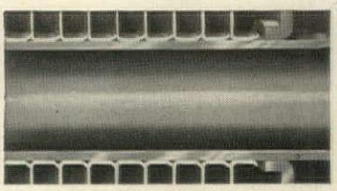
durability... systems

Every TRANE feature—from the accurately streamlined fan inlet to the exclusive kinetic orifice—has been *proved in actual application*. You know you can count on TRANE Fans and Coils for efficiency, durability and compactness *before* you order! For details see your nearest TRANE Sales Office or write TRANE, La Crosse, Wis.

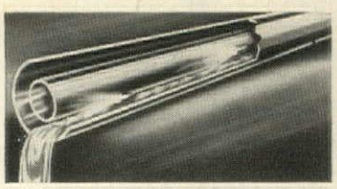


Compare Trane with any other coils

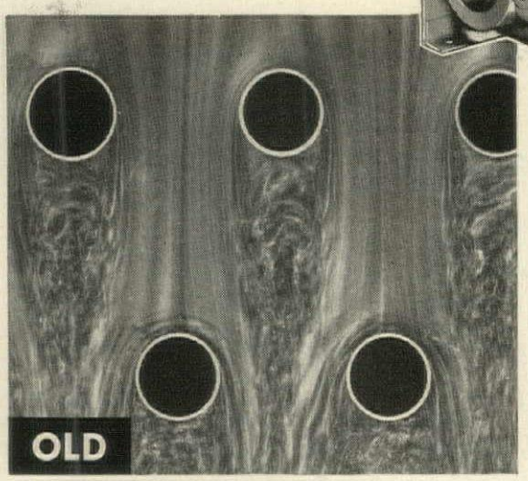
- **Accurate ratings** proved by over twenty-five years of field and laboratory testing.
- **Exclusive dual fin** contact assures high heat transfer, greater strength.
- **Greater rigidity** assured by the formed delta ridge of the new Delta-Flo Fin.
- **Low air friction** of plate type fin offers minimum air resistance.
- **High coil capacity** yet wide fin spacing.
- **25% more effective** use of the fin surface.
- **More uniform heat** transfer over entire surface of the fin.



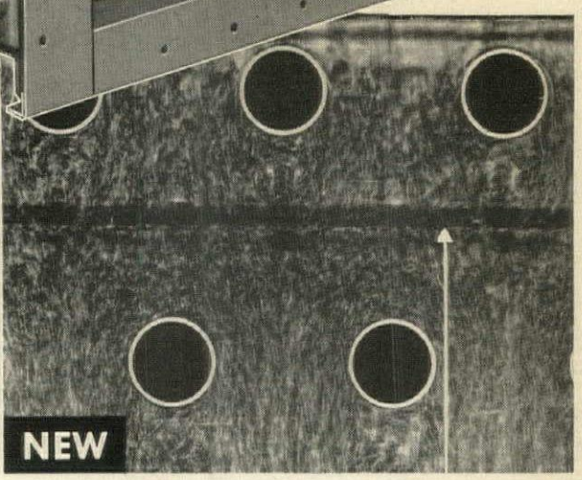
Mechanical fin-to-tube bond is as strong as though fin and tube were one. Wide, flat collar forms generous heat transfer area.



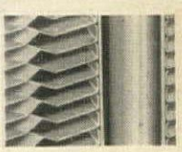
Kinetic orifice on SD coils releases steam in the direction of the condensate flow. Accelerates condensate flow, guards against freezing, provides more uniform temperature distribution on modulated control.



Old plate fin. With flat fin design, turbulence is concentrated behind each tube as shown by this unretouched laboratory test photo. Since turbulence is concentrated, a large part of the fin area produces little heat transfer.



New Delta-Flo Fin. Delta-shaped ridge just ahead of each row of tubes extends turbulence over *entire fin surface* for uniform-heat transfer. Unretouched test photo shows how every inch of fin surface contributes to heat transfer.



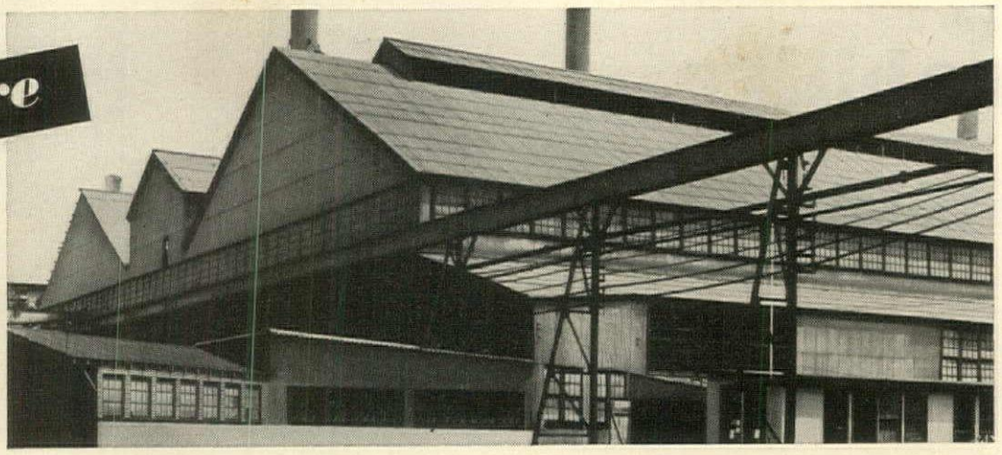
TRANE Fans and Coils *for efficient built-up systems*

OF AIR CONDITIONING, HEATING, VENTILATING AND HEAT TRANSFER EQUIPMENT

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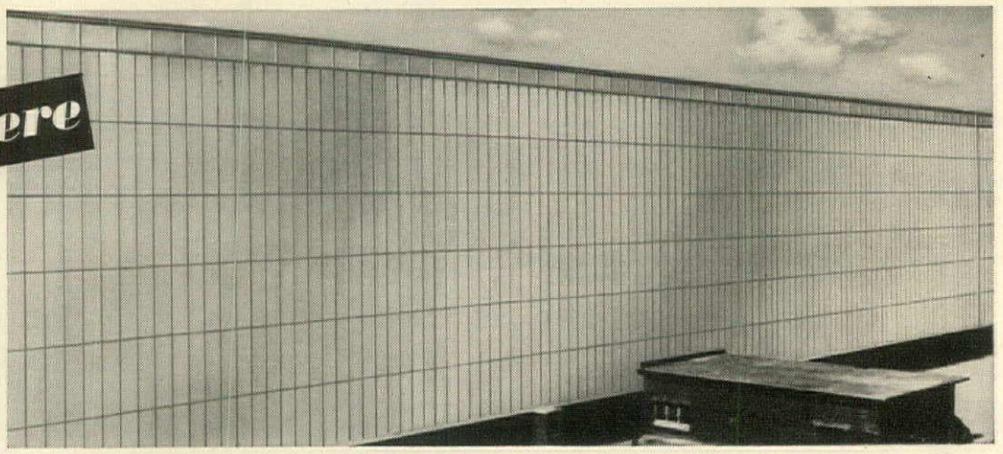
No costly maintenance problem

...here



On this steel plant, roofs and sidewalls of Johns-Manville Corrugated Transite withstand corrosive fumes . . . will never corrode or rot.

...or here



On this aircraft plant, stonelike Corrugated Transite sidewalls offer years of service without paint or special treatment to preserve them.

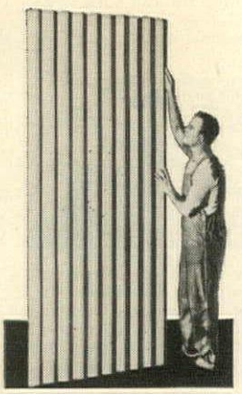
build with Johns-Manville Corrugated Asbestos Transite

For maintenance-free roofs and sidewalls plus protection from fire, rot and weather

YOU SAVE MONEY on construction and maintenance when you build with Johns-Manville Corrugated Transite®. Corrugated Transite comes in large sheets that require a minimum of framing . . . permits fast economical construction of industrial, commercial, institutional and agricultural buildings.

Made of asbestos and cement, Corrugated Transite is practically indestructible. It never needs paint or special treatment to preserve it . . . it's fireproof, rotproof and weatherproof. Corrugated Transite is also used increasingly for interiors. The streamlined corrugations and attractive shadow lines offer interesting design possibilities.

Investigate Johns-Manville Corrugated Asbestos Transite and learn how you can build quickly and easily . . . have an attractive, long-lasting, trouble-free structure. Write Johns-Manville, Box 158, Department AF, New York 16, New York. In Canada write 565 Lakeshore Road East, Port Credit, Ontario.



- Large sheets go up quickly
- Easy to fasten to steel
- Easy to nail to wood
- Easy to saw
- Easy to drill

See "MEET THE PRESS" on NBC-TV, sponsored on alternate Sundays by Johns-Manville

JOHNS-MANVILLE JM PRODUCTS

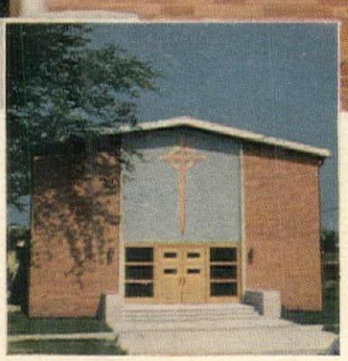
Johns-Manville

entrance detail in *Suntile* ceramics

adds decorative interest to a simple church



HOLY TRINITY CHURCH, SKOKIE, ILL., ARCHITECTS: EKROTH, MARTORANO, EKROTH, CHICAGO, ILL.



This facade decoration is economically executed in Suntile Satinized Ceramics—rugged, natural clay and porcelain tile that serve equally well in floors or walls, indoors or out.

The tapestry-like blue field is a mixture of 1"x1" tile (nos. 253, 121, 154). The cross is of glazed 1"x1" units in buff shades (nos. 124, 221, 223).

For ceramic tile that will stimulate your design ideas—and for guaranteed installation, call your Suntile dealer.

May our Design Staff help you?

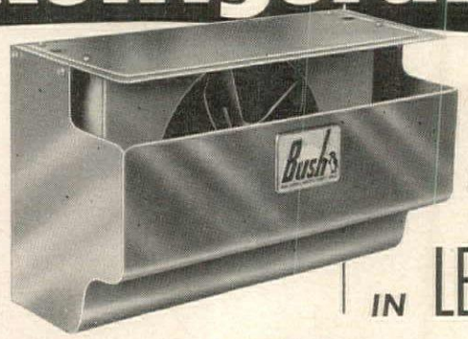
Layouts for special designs like this, or suggestions for tile applications in any area may be obtained from our staff of trained ceramic artists, headed by Harry J. Macke. There's no charge—just send us elevations or sketches. Address Dept. AF-125.



THE CAMBRIDGE TILE MFG. CO.

P. O. Box 71,
Cincinnati 15, Ohio

MORE Refrigeration



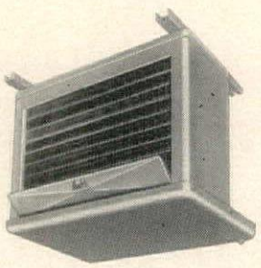
IN LESS SPACE

NOW POSSIBLE WITH **BUSH** INNER-FIN® UNITS

Inner-Fin coil construction, patented design feature available only in BUSH units, means more cooling with less bulk. And there's a BUSH unit to meet your every refrigeration requirement: high temperature, low temperature, floor mounted or ceiling hung models in a wide range of capacities.

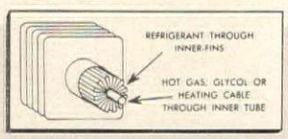
What's more, you'll find the BUSH sales engineer a thoroughly trained specialist who can be most helpful when you're specifying refrigeration equipment or engineering an installation. Make a note to have him stop in.

Typical Bush Inner-Fin Units



'JF' JET-FLO UNIT COOLERS (Above) — Stainless steel cases, completely non-ferrous construction. Durable, gleaming surfaces that stay hospital-clean. Units can be wall or ceiling mounted . . . air direction either suck-through or blow-through. Ideal for reach-in or walk-in refrigeration boxes . . . wherever space is limited and cleanliness vital.

LOW TEMPERATURE REFRIGERATION UNITS — 'ED' Electric Defrost Unit Coolers (right) feature specially designed heater cable contained **within the inner tube** of Inner-Fin coil . . . assuring trouble-free defrosting **from the inside. 'HG'** Hot Gas Defrost Unit Coolers utilize heat of compression for defrosting, with hot gas circulated within the inner tube. **'GD'** Glycol Defrost Product Coolers, for larger installations, make use of heated glycol as defrost medium . . . are available in both floor and ceiling models. Low Temperature Catalog No. 835 contains complete specifications.



BUSH INNER-FIN® patented Fundamental principle is the arrangement of longitudinal fins **inside** a tube in conjunction with outer fins. Because Inner-Fin provides greater surface area and smaller hydraulic radius, transfer of heat is more rapid. Consequently, smaller coils are possible and units incorporating Inner-Fin coils can be more compactly designed.

Write for complete information on Bush Inner-Fin refrigeration and air conditioning products . . . also standard line of Unit Coolers, Plasti-Coolers and Coils . . . most complete in the industry.

BUSH

BUSH MANUFACTURING COMPANY

WEST HARTFORD 10, CONNECTICUT

RIVERSIDE • CALIFORNIA

DATES

American Society of Refrigerating Engineers, annual meeting, **Dec. 1-3,** Hotel Traymore, Atlantic City.

National Assn. of Building Owners and Managers, presidents' conference, **Dec. 4-6,** LaSalle Hotel, Chicago.

American Assn. of State Highway Officials, annual convention, **Dec. 4-9,** Jung Hotel, New Orleans.

Design for Environment Conference, sponsored by Building Research Institute, **Dec. 7-8,** National Academy of Sciences, Washington, D.C.

Porcelain Enamel Design Competition closes **Dec. 12.**

Nuclear Engineering and Science Congress, coordinated for ASME, ASCE and other sponsoring groups by the Engineers Joint Council, **Dec. 12-16,** Public Auditorium, Cleveland. Program will include papers on reactor design and construction, effects of radiation on structural materials; concurrent Atomic Exposition, **Dec. 10-16.**

Traffic Seminar for Transit Management and Labor, sponsored by New York University, **Dec. 13-14,** New York University, New York.

American Roadbuilders Assn., annual convention, **Jan. 11-14,** Municipal Auditorium, Miami Beach, Fla.

Roundtable for architects, "An Exploration of Architectural Ideals and New Contemporary Approaches," conducted by Richard Neutra, **Jan. 12-19,** University of Alberta, Edmonton, Alberta, Canada.

Highway Research Board, annual convention, **Jan. 16-20,** Sheraton-Park Hotel, Washington, D.C.

American Society of Heating and Air-Conditioning Engineers, annual meeting, **Jan. 23-25,** Sheraton-Gibson Hotel, Cincinnati.

Plant Maintenance and Engineering Show, Jan. 23-26, Convention Hall, Philadelphia.

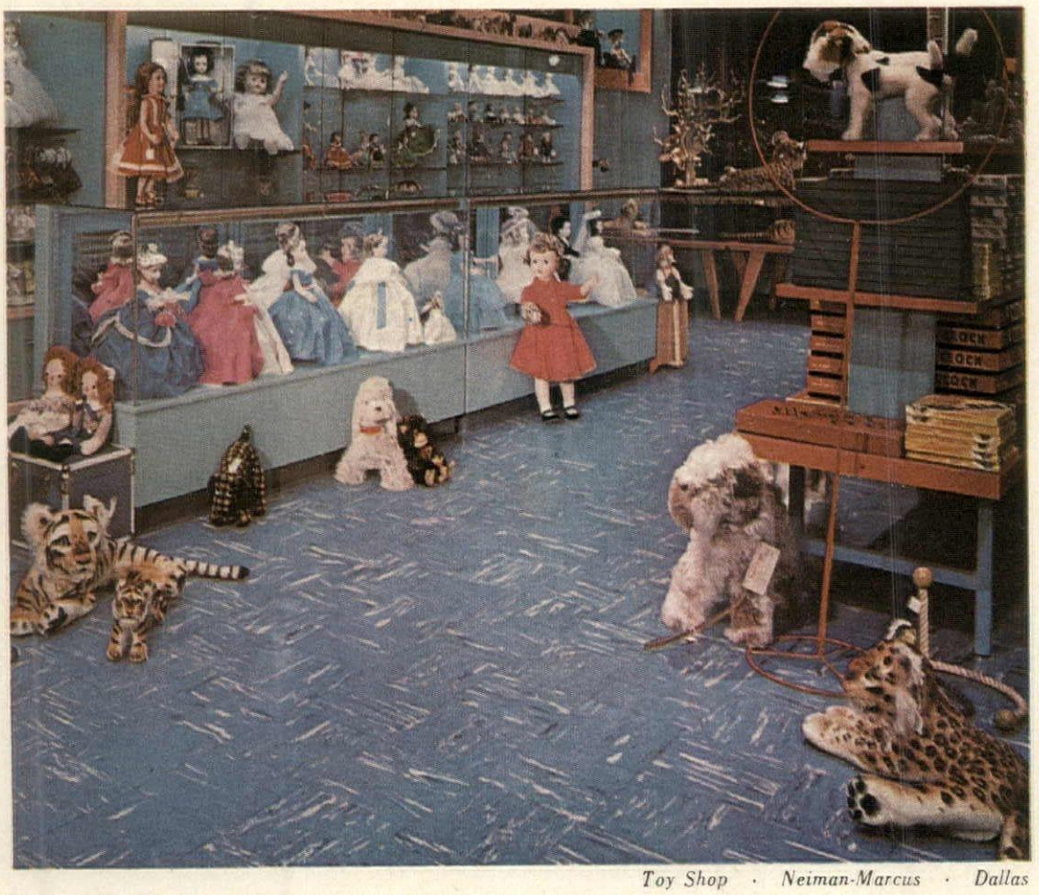
Associated Equipment Distributors, annual convention, **Jan. 29–Feb. 2,** Conrad Hilton Hotel, Chicago.

Associated General Contractors of America, annual convention, **Feb. 13-16,** Waldorf Hotel, New York.

National Electrical Manufacturers Assn., midwinter meeting, **March 12-16,** Edgewater Beach Hotel, Chicago.

National Housing Conference, annual meeting, **April 9-10,** Hotel Statler, Washington.

Vina-Lux ..showcase floor for smart shops



Toy Shop · Neiman-Marcus · Dallas



Sales-wise merchants know the importance of proper merchandising surroundings. No part of the store "backdrops" goods for sale more than the *floor*.

So naturally, retailers are turning to Vina-Lux vinyl-asbestos tile as a basic "selling floor surface". Its balanced range of colors with superior light reflectance — its cushioned resiliency underfoot — and its smooth easy-to-clean surface all combine to make it a logical choice.

America's leading stores, in increasing number, are choosing Vina-Lux to help sell goods—and to keep floor costs down. Architects are finding it the answer not only to store floor problems, but for schools, hospitals and other kinds of public buildings.

Perhaps Vina-Lux can help you solve a knotty floor problem. Drop us a line and we'll be glad to have a representative give you the whole story on this better resilient flooring.

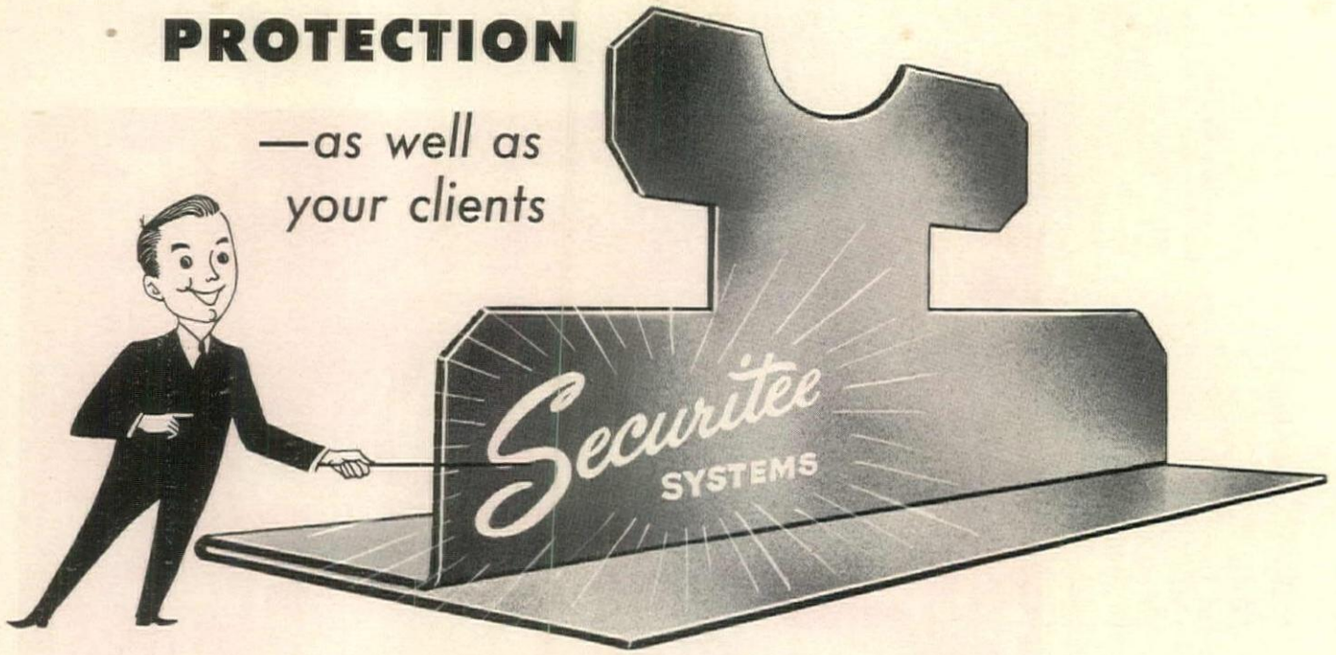
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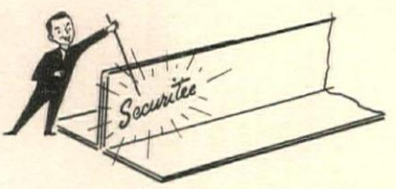
FOR YOUR PROTECTION

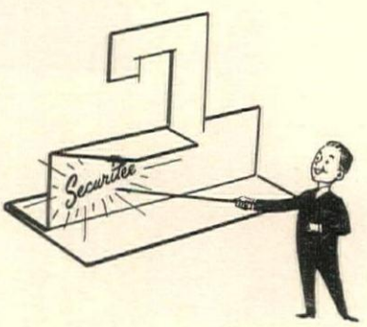
—as well as your clients

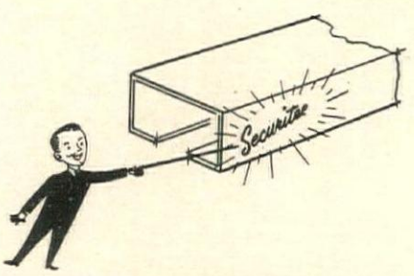


As of January first, 1956, ALL Securitee Systems parts will be imprinted with the company trade-mark.

By making this imprint a part of your specifications, you assure yourself, as well as your client, of a quality acoustical mechanical system—WITHOUT ADDITIONAL COST.





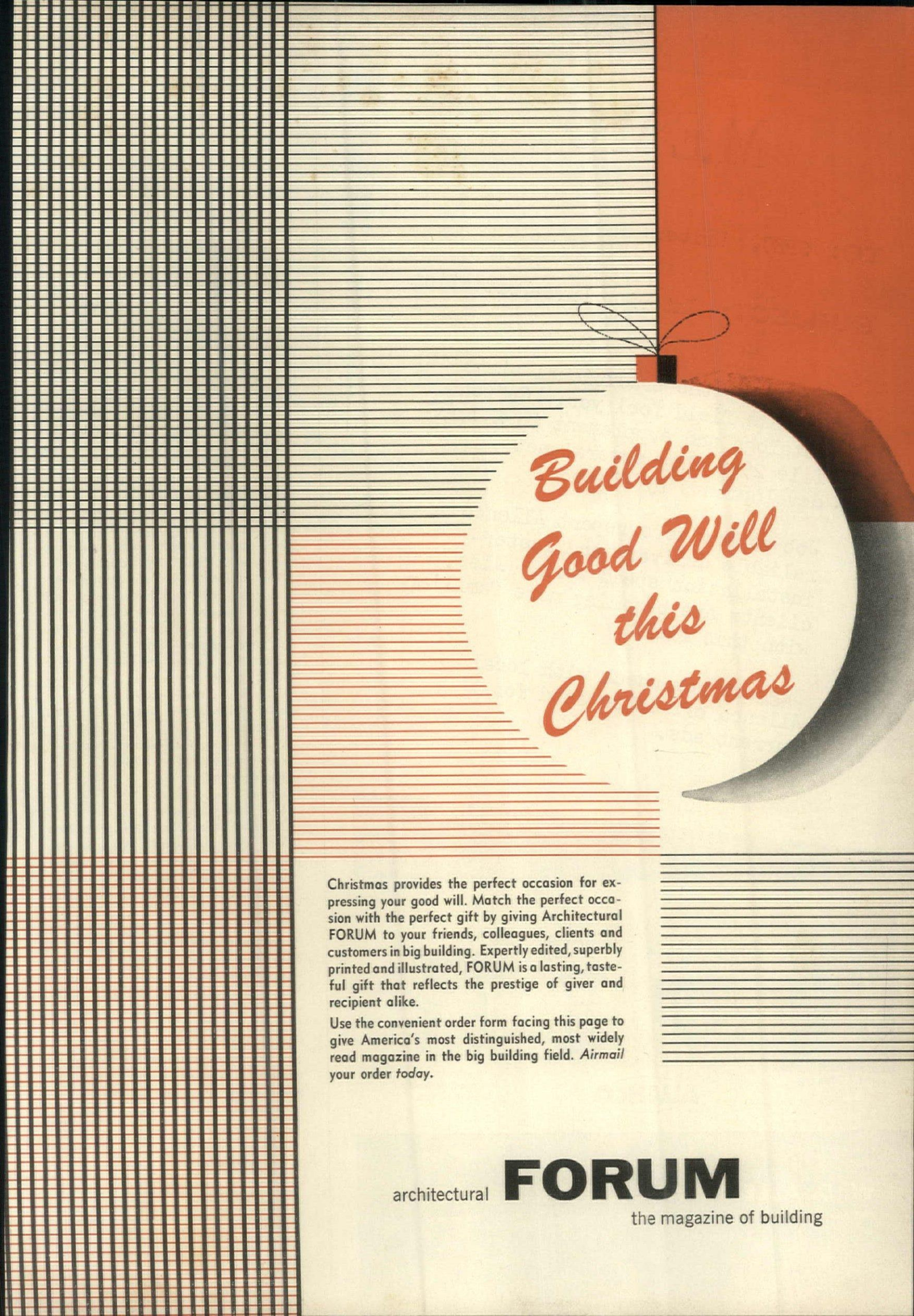


To our many friends and customers—
ARCHITECTS, DESIGNERS, CONTRACTORS, APPLICATORS, *all.*
may we take this opportunity to extend to you greetings of the season and our thanks for making this the most successful year in our brief history.
W. J. Haertel & Co.

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the magazine of building

MEMO

TO: SPEC. Writers

SUBJECT: Interior Fire-Protection

Don't let the traditional stability of this field fool you. Current catalogs and supplement to A.I.A. file 29e2 show several new developments by Allenco.

Job supervisors report Allenco reliable delivery and faster-installation speed work. Also, clients are becoming more familiar with this field.

Suggest you check with local Allenco office or send for current ads.



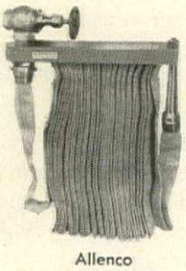
Allenco Fire Line Hose Unit

Allenco Siamese Fire Department Connection



Allenco Fire Line Fog Nozzle





Allenco Improved, Welded Linen Hose Rack

ALLENCO

Established 1887

W. D. ALLEN MANUFACTURING CO.

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(

(1955)



December is here, a Santa Claus is in the streets, and it seems surprising that the recorded year is already about to revolve in its last groove. It was a many-splendored year, as they go, and maybe it is worth a spin backward.

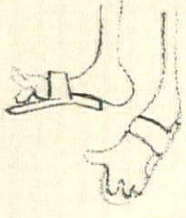
In building circles, 1955 was big for Oriental influence (several good books on Japanese building, the careful Japanese order visible in buildings, 121,000 pairs of paper slippers distributed to people who visited the Museum of Modern Art Japanese Exhibit House). Also in 1955, lots of people made the tactical mistake of getting blind mad at Frank Lloyd Wright.

The American Institute of Architects became keenly public-relations-conscious, and its voice changed, dropping at least an octave to begin the commentary on the AIA film, "Architecture—USA," with vast resonance: *This was the beginning . . . a new land . . . a land to expand in . . . a land to build from . . . a new land for a new architecture.* Then a few seconds later, still deeper:

. . . These were the forests of a new land,
the mountains and quiet lakes
and deep valleys,
the sun-baked deserts,
the endless wastelands . . .

And the National Assn. of Home Builders became even more public relations conscious, inviting a team of Soviet building experts over here to see how US housing, big and little, is put together (more on this later).

This was the year we received a press release from a public relations firm called Bosh Stack Associates. Also in 1955, there was a movie about an architect, Stanford White. In it, Ray Milland played White with an angry pomp, as if he had been tricked into it. Maybe he was—two of his lines to his young mistress: 1) "How do you like your caviar—with a soupçon of onion, or a whisper of lemon?" 2) "And you must learn to play tennis—and you must forget me!"



PARENTHESES)

(PRECAUTIONS)

This was one of those bad years for dictators; they were beset by dangers that one of the first full-time architects, Leone Battista Alberti, pointed out in the fifteenth century. A translation of his *Ten Books on Architecture* was reproduced this year by Alec Tiranti Ltd. in London, and imported by Transatlantic Arts, Inc. A passage of the antique, but timely, text:

> into their Hands. A good King takes Care to have his City ſtrongly fortified in thoſe Parts, which are moſt liable to be aſſaulted by a foreign Enemy: a Tyrant, having no leſs Danger to fear from his Subjects than from Strangers, muſt fortify his City no leſs againſt his own People, than againſt Foreigners: and his Fortifications muſt be ſo contrived, that upon Occaſion he may employ the Aſſiſtance of Strangers againſt his own People, and of one Part of his People againſt the other. In the preceding Book, we ſhewed how a City ought to be fortified againſt foreign Enemies: Let us here conſider how it is to be provided againſt the Inhabitants themſelves.

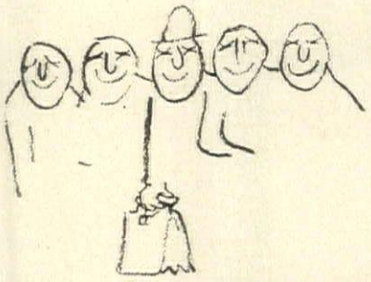
Alberti also covered the block-and-tackle, with a philosophical illustration:

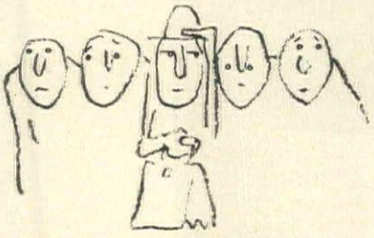


(TOURISTS)

When the National Assn. of Home Builders saw Soviet farmers out admiring the Midwest corn last summer they were quick to invite a similar group of construction men from the USSR to inspect the US housing industry. The invitation was accepted just as quickly.

Although the Russian housing tourists were somewhat more critical than the farm tourists had been, a cordial, cheery time was had by all, generally speaking. At one point, when the Russians were happily ascending a New York City apartment building in an elevator, and the elevator got





stuck between floors, their smiles may have slipped slightly. Anyone's would.

US architects' smiles may have suffered considerably when they read in their newspapers that one of the Russian team making the housing tour had commented that 6% was far too high a fee for American architects to charge to design houses. This is peace talk?



(DRINK-IT-YOURSELF)

It has been a year of design around the distilleries too. A couple of Christmases ago the liquor companies began to bring design to bear on their holiday sales by providing special gift decanters. A smash hit, the custom has increased and multiplied so wildly that next Christmas it may be necessary to buy your toothpaste in a cut-glass tube. A selection of decanters is shown here, some quite handsome, others typical of what happens when an old form is hit by modern merchandizing zeal: two parts perfumed slickness, one part quick-aged blended tradition—a zowie cocktail, sweet, not dry.

One aspect of the decanters being stressed this year is their adaptability to decor, even after they are empty. In one form or another, these bottles will be hanging around, horrifying interiors for decades. One company includes a manual on how to turn your decanter into a lamp, a compote base, or candelabra. (It takes two bottles before you can make a candelabra, the advertising points out slyly. Taken internally?) One decanter (bottom, right)

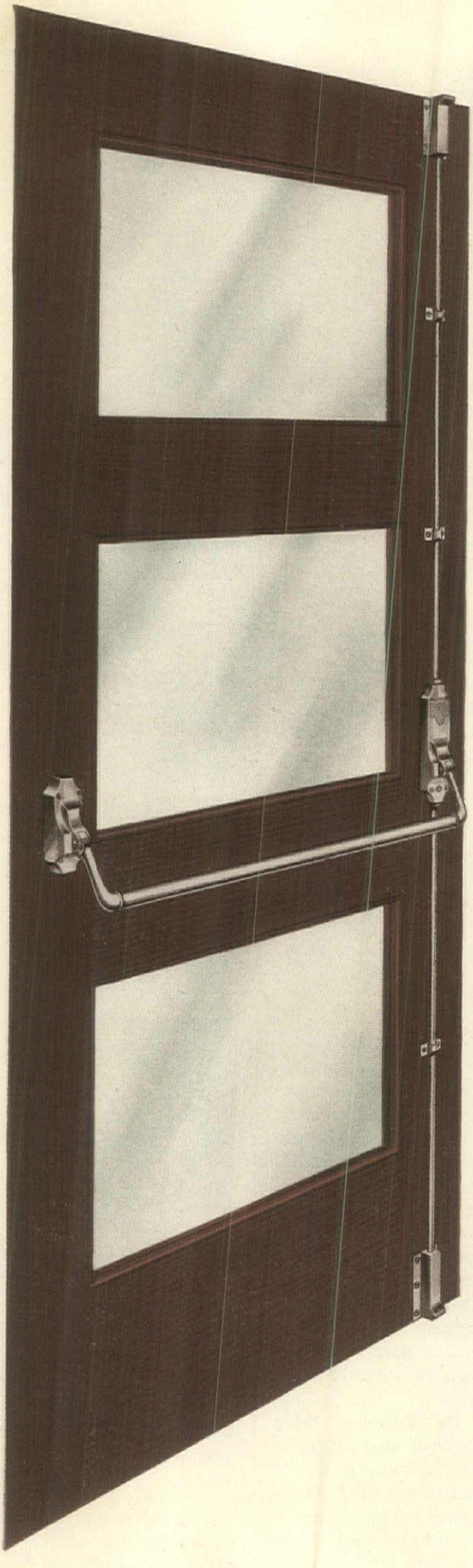


is designed to be laid on its side, when dead, and made into a glass ashtray. Some one has suggested that four copies of the decanter beside it, turned upside down and filled with sand, would make nice legs for a modern bed.

(POOF)

During the gigantic national air raid drill last spring we obediently lowered the windows and Venetian blinds of our office and

continued on p. 62

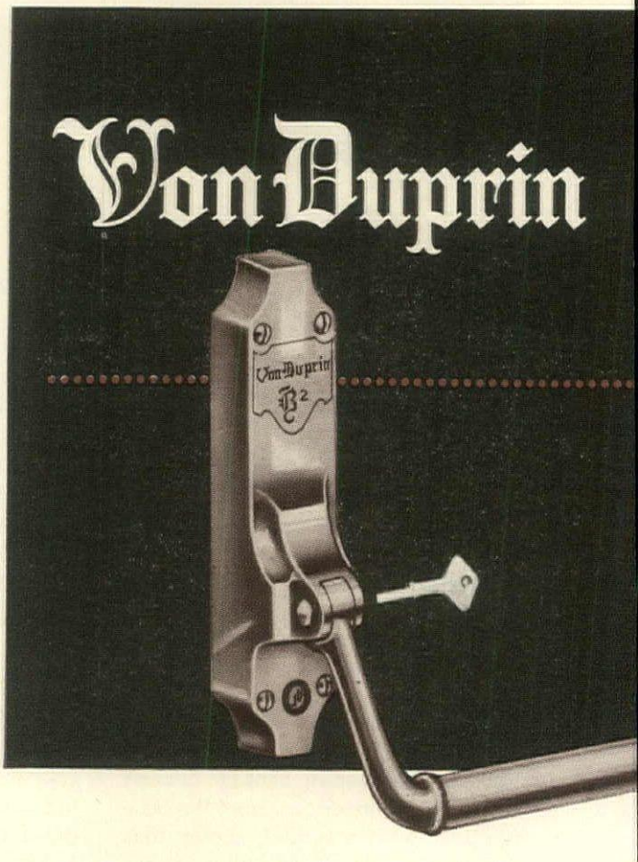


"THE SAFE

Increasing numbers of architects and other safety-minded officials the country over specify Von Duprin exit devices to provide "the safe way out!" And for good reason: Von Duprin's unequalled record of performance! Even under the most adverse conditions, these devices operate efficiently . . . with only normal maintenance.

Since originating fire and panic exit devices in 1908, Von Duprin has consistently paced the field in new designs, incorporating new materials and production methods.

Whether effectively handling the daily flow of traffic . . . or standing ready for that "once-in-a-lifetime" emergency, Von Duprin-equipped doors are your answer to safe, sure exit.

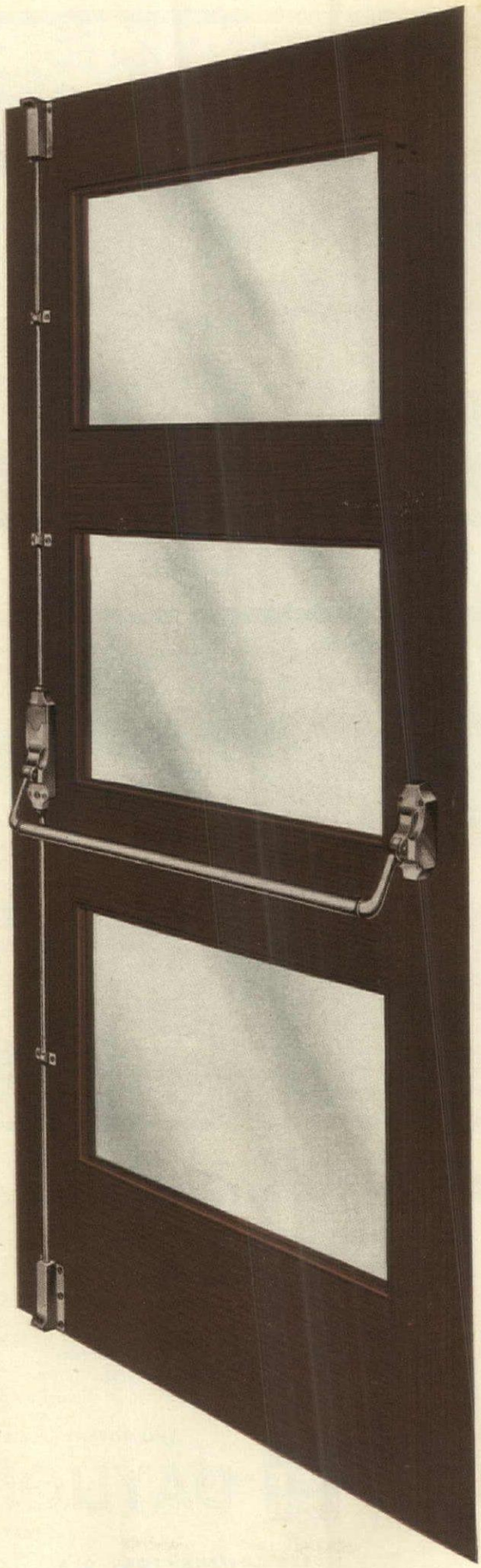


WAY OUT!"

The vertical rod Type B² device, illustrated here, is a part of the complete Von Duprin line of exit devices and auxiliary hardware designed to meet every exit requirement.

For complete information, or for expert advice on specific exit needs, call on your Von Duprin "Exit Specialist"—either a factory representative or a selected builders' hardware distributor.

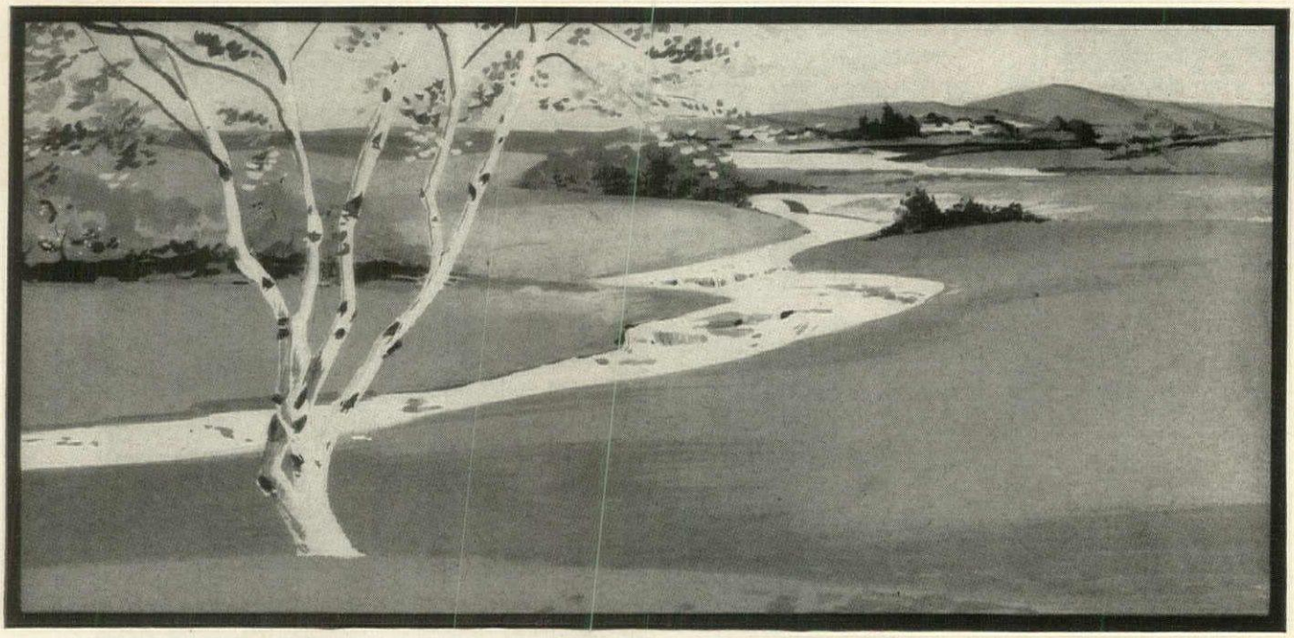
VONNEGUT HARDWARE CO.
VON DUPRIN DIVISION
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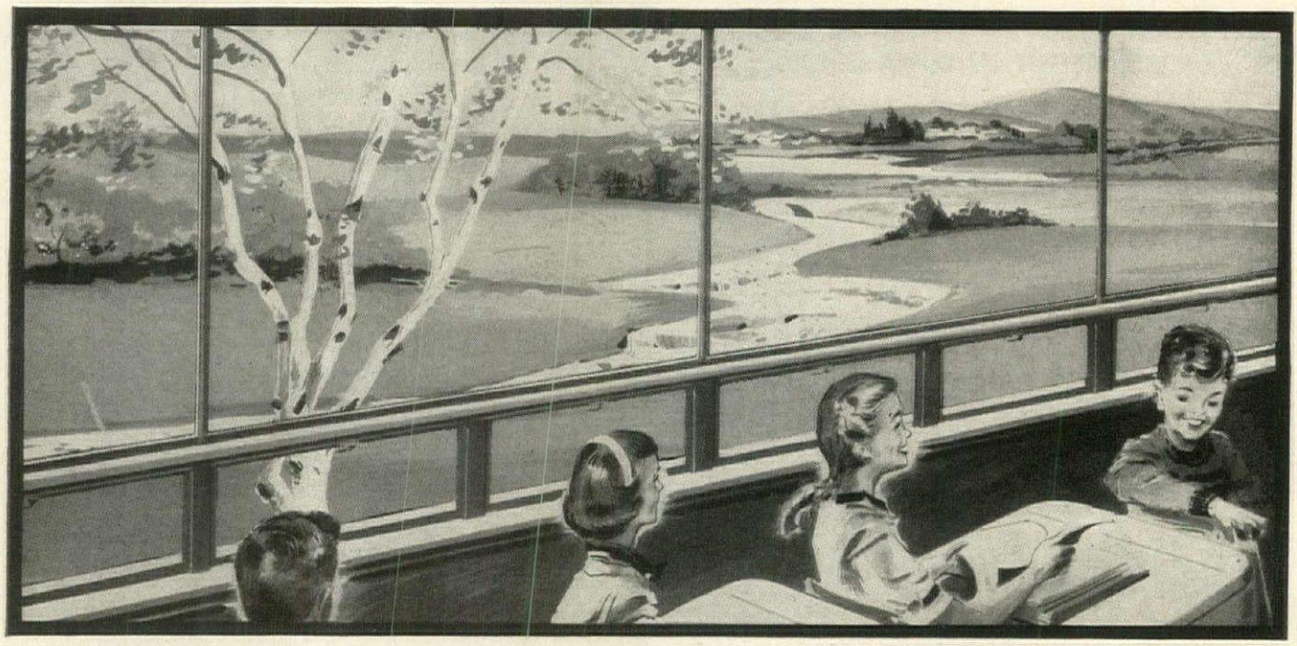
FIRE AND PANIC EXIT DEVICES



Type B²
verticle rod or
mortise lock



bring the outdoors



indoors to make your school a happy place

Aren't children happiest when they're outside? And unhappiest when they're penned up? That's why they seem to learn more—and like it better—in a "Daylight Wall" classroom. Clear glass from sill to ceiling brings in the grass and the trees, the sun and the sky.

Saves money, too. Artificial lighting isn't needed so much. Less wall area to paint and maintain. Lower construction costs. In cold climates your daylight walls should be *Thermopane** insulating glass.

For your free copy of "How To Get Nature-Quality Light for School Children", write Department 42125, Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.

Or call your L·O·F Distributor or Dealer (listed under "Glass" in yellow pages). *®

THERMOPANE • PLATE GLASS • WINDOW GLASS

L·O·F GLASS

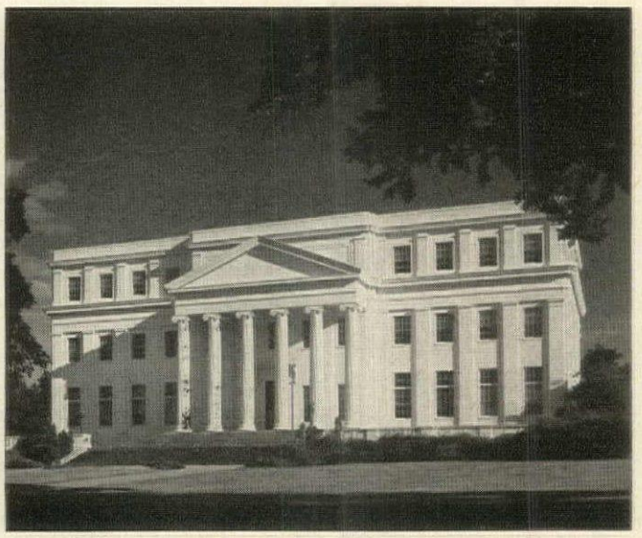
DAYLIGHT WALLS

. . . THAT LET YOU SEE

LIBBEY • OWENS • FORD GLASS COMPANY, TOLEDO 3, OHIO



Pumping station, Spokane, Wash. *Whitehouse & Price, Spokane, architects*



Public building, Montgomery, Ala. *Warren, Knight & Davis, Birmingham, architects*

Design Distinctive Buildings for any purpose with

Architectural Concrete

You can design buildings of distinction for any purpose with architectural concrete. It is ideal for the functional demands of an industrial plant and equally adaptable to the aesthetic requirements of a graceful church, an imposing public building or an attractive commercial structure.

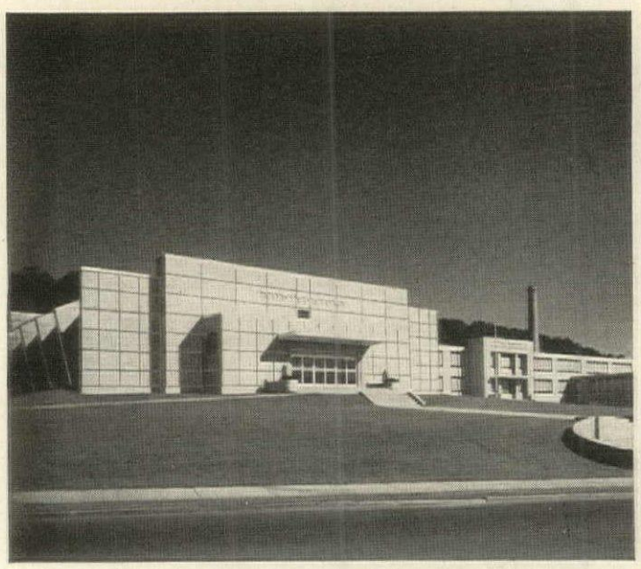
Architectural concrete is a versatile structural material. You can use it to express any of the traditional designs. You'll also find it well-suited to contemporary style. It allows unusual freedom in design. It possesses tremendous strength and durability, yet it can be cast in a limitless variety of shapes and patterns to reproduce the authentic style and details of any architectural period.

Architectural concrete buildings can meet the highest standards for structural strength, durability and firesafety. They afford maximum resistance to storms, earthquakes and atomic blasts. Low in first cost, concrete structures give years of service with little maintenance. Budget-minded building owners know that means ***low annual cost.***

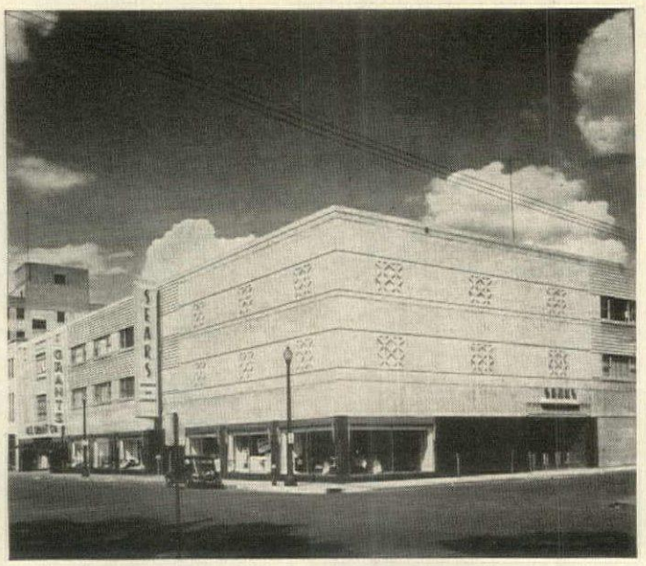
For information about designing architectural concrete structures, write for free literature. It is distributed only in the United States and Canada.

PORTLAND CEMENT ASSOCIATION
Dept. A12-7, 33 West Grand Ave., Chicago 10, Illinois
A national organization to improve and extend the uses of portland cement and concrete...through scientific research and engineering field work

Junior high school, Williamsport, Pa. *D. H. Grootenboer, Williamsport, architect*



Retail store, La Crosse, Wis. *Boyum, Schubert & Sorensen, La Crosse, architects*





ARE YOU Penny-Wise AND Repair-Foolish?

You'll find the answer to this one in your piping maintenance cost sheets. If pipe repair and replacement are recurring expenses, chances are the cause can be traced to the use of low-first-cost piping in an effort to "save" initially. When this low-first-cost material starts to fail prematurely, labor costs for repairs can turn the so-called "savings" into real *spendings*.

Pipe service life, not initial cost, is the only true way to compare pipe. Byers Wrought Iron pipe answers this requirement with long, trouble-free service. Write for our booklet, *True Piping Economy*. A. M. Byers Co., Clark Building, Pittsburgh 22, Pa.

Available in Canada and throughout the world.



WROUGHT IRON PIPE

(PARENTHESES)

continued from p. 57

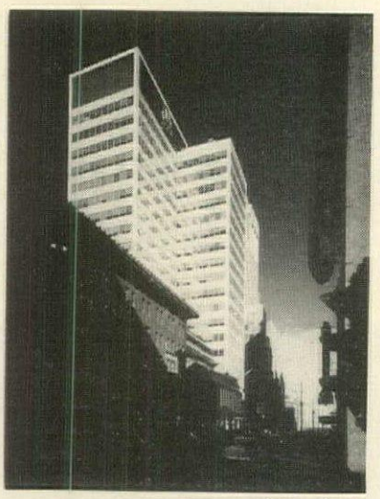
darted out into the hallway to stand and chat nervously with the other people who work on the floor. Nobody returned to his desk until the all-clear sounded.

It was with some hurt that we read in the paper the following morning that we probably had been wiped out anyway. If we interpret the radioactive drift map correctly, the only likely escape the day the thing drops is to be out on the golf course beyond the suburbs, in sheer dereliction of duty.

But if the hypothetical bomb gets so big that it hits the golf courses as well as the cities, we must realize that our civilization will then disappear—and perhaps won't be replaced for millions of years by a new race of golfers. But no matter how long it takes, a new man will come along eventually, and he will wonder how things were with us.

If one of the archaeological relics found by this curious man of the future is a file of today's architectural magazines, it is probably safe to predict that our era will become known in retrospect as "The Time of the Black Sky."

It is in the dramatic, unreal photographs of buildings that future man will find this designation. It seems, in most architectural



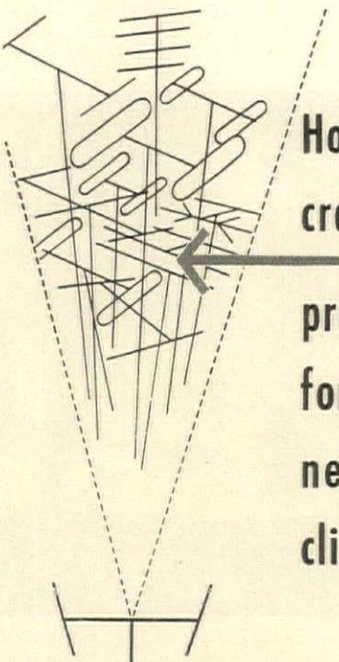
© *Ezra Stoller*



Lionel Friedman

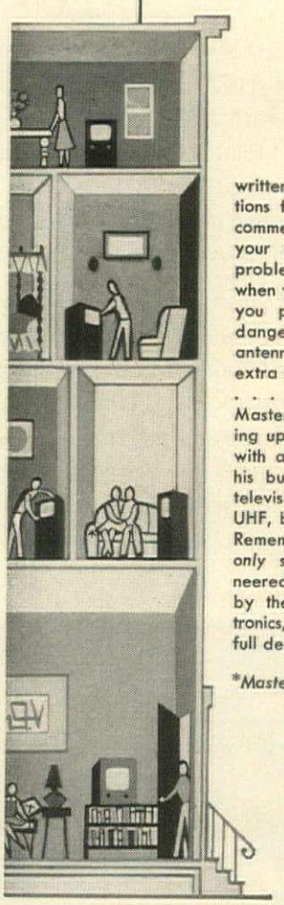
photographs, that there are strange storms approaching; even in pictures obviously

continued on p. 66



How to crack this problem for your next client!

MASTER-TENNA* by RCA...



written right into your specifications for smaller residential or commercial buildings . . . assures your client profits instead of problems from television. And when you specify Master-Tenna, you protect your client from dangerous, unsightly rooftop antenna clutter. You set up an extra source of revenue for him . . . tenants' fees pay for Master-Tenna, then keep rolling up profits. You provide him with a built-in selling point for his building . . . sharp, clear television pictures in VHF or UHF, black and white or color. Remember, Master-Tenna is the *only* system of its kind engineered, installed and serviced by the world leader in electronics, RCA! The coupon brings full details.

*Master-Tenna®

RCA®

RCA SERVICE COMPANY, INC.

A Radio Corporation of America Subsidiary

RCA Service Company, Inc. P-2
Master-Tenna Sales
Camden, N. J.

Please show me, in full detail, how to specify Master-Tenna.

NAME_____ COMPANY_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

NOW! a white seat that STAYS white and can take it



Here's dramatic evidence that Olsonite's new Shock-Proof Seats can really take it! In the torture test shown here, a gigantic 48-inch Stillson wrench was used to pull half of the Olsonite Seat more than 12 inches out of line. The result? No cracks or fractures of any kind!



In addition to the regular bowl model (#5) and elongated bowl (#10), the amazing new Olsonite Shock-Proof industrial and commercial seats are available with a concealed check hinge (#5CC and #10CC) made entirely of non-corrosive metal. A lug on the hinge posts locks against cutaway on insert in extended seat back, preventing the seat from being raised to more than 11° beyond perpendicular.

A-4

NOW YOU CAN SPECIFY WHITE SEATS for all industrial and public toilet installations—white seats that won't fade or "yellow" for a lifetime of normal use!

With the new Olsonite White Shock-Proof Seats, it's easier to keep that clean, sanitary appearance than with black seats. Shock-Proof Olsonite Seats have also proven their ability to withstand shocks 5 times greater than ordinary solid one-piece seats. Even deliberate abuse in public toilets and industrial installations won't crack, chip or break Olsonite Shock-Proof Seats—and they won't absorb water.

Like all Olsonite Seats, Shock-Proof models are solid one-piece construction—there is no applied finish to crack or peel. They are sanitary white *all the way through*. Be sure to specify the seat that *stays white*—the seat that can "take it" without damage for a lifetime of normal use—Solid Olsonite Shock-Proof Seats.

Olsonite's complete catalog is available on request. Please write on your letterhead to:

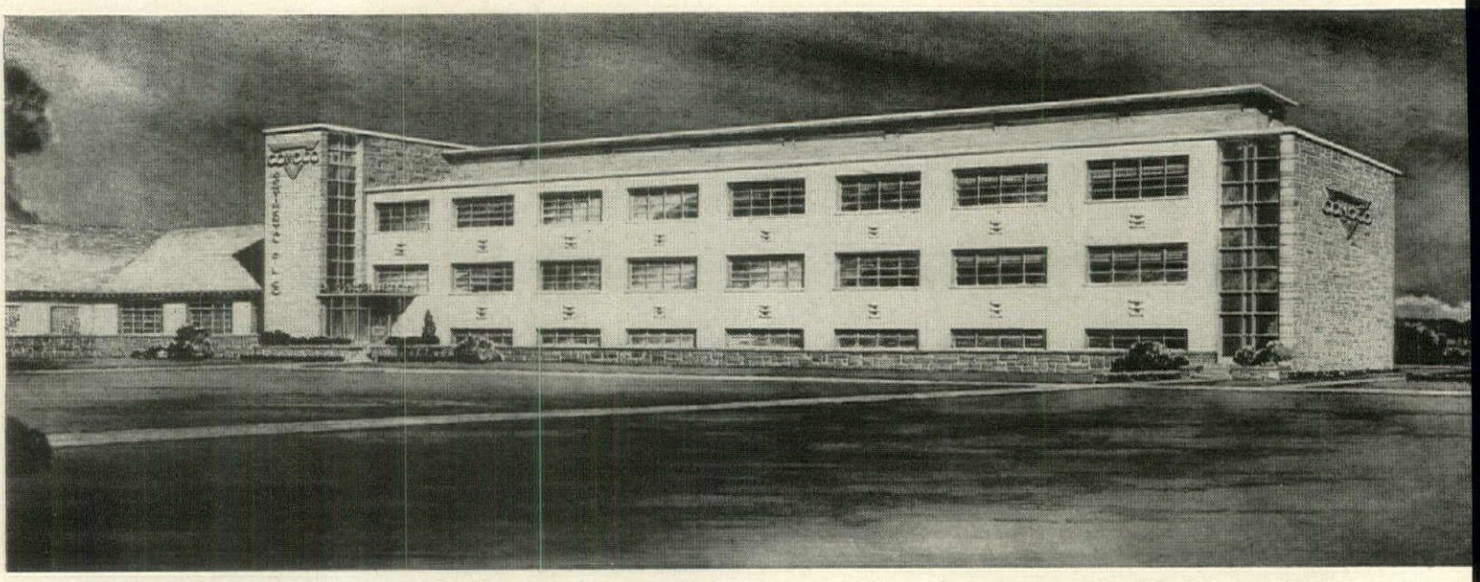
SOLID Olsonite SEATS

ORIGINATORS OF THE SOLID PLASTIC SEAT

Olsonite Shock-Proof Models Are Available In White or Black

SWEDISH CRUCIBLE STEEL COMPANY

Plastics Division, 8561 Butler Avenue, Detroit 11, Michigan



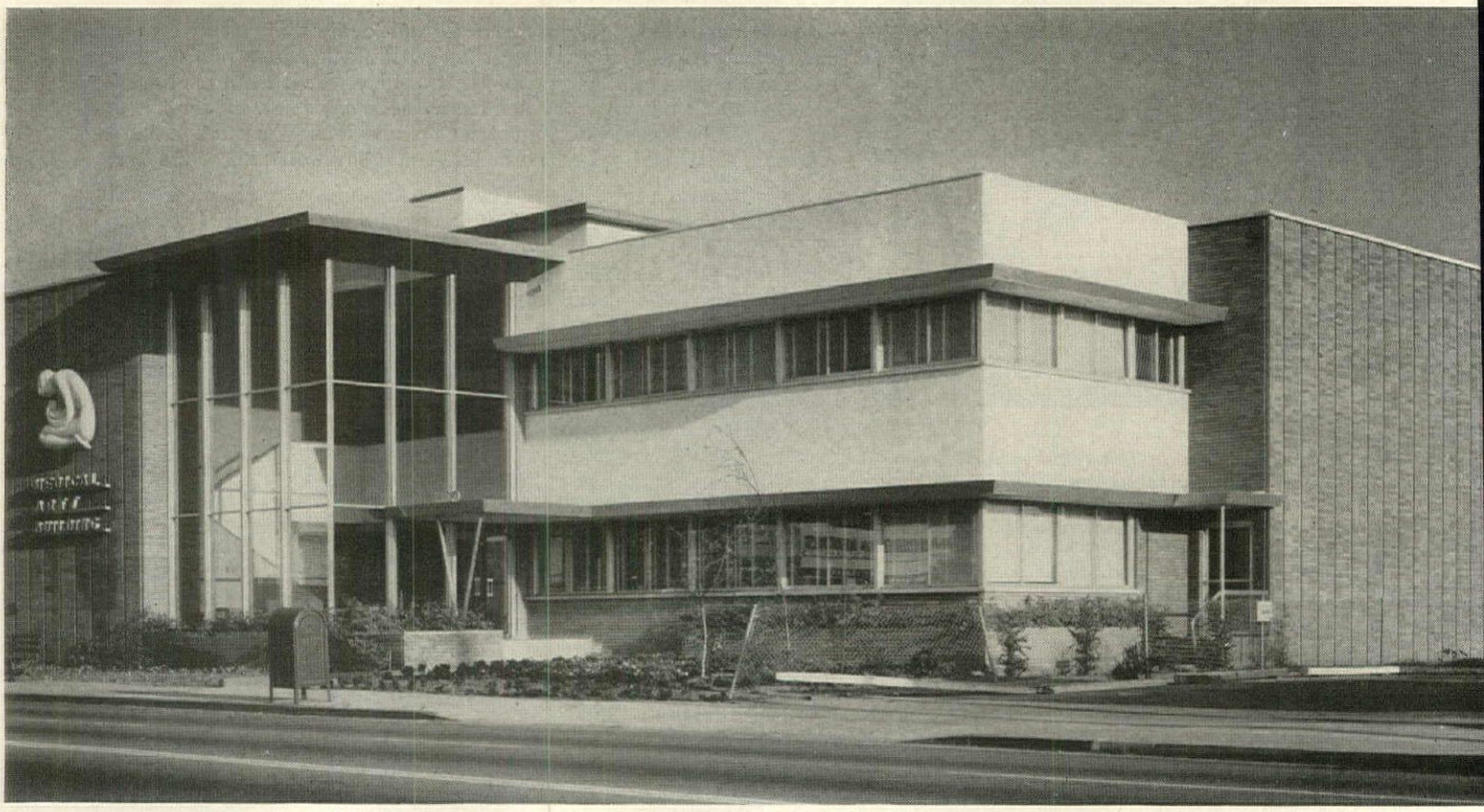
Improved Building Design—Elimination of the unsightly elevator penthouse by utilizing Rotary Oildraulic Elevators gives the architect or engineer greater freedom of design. Buildings may be planned for maximum beauty as well as practical economy.

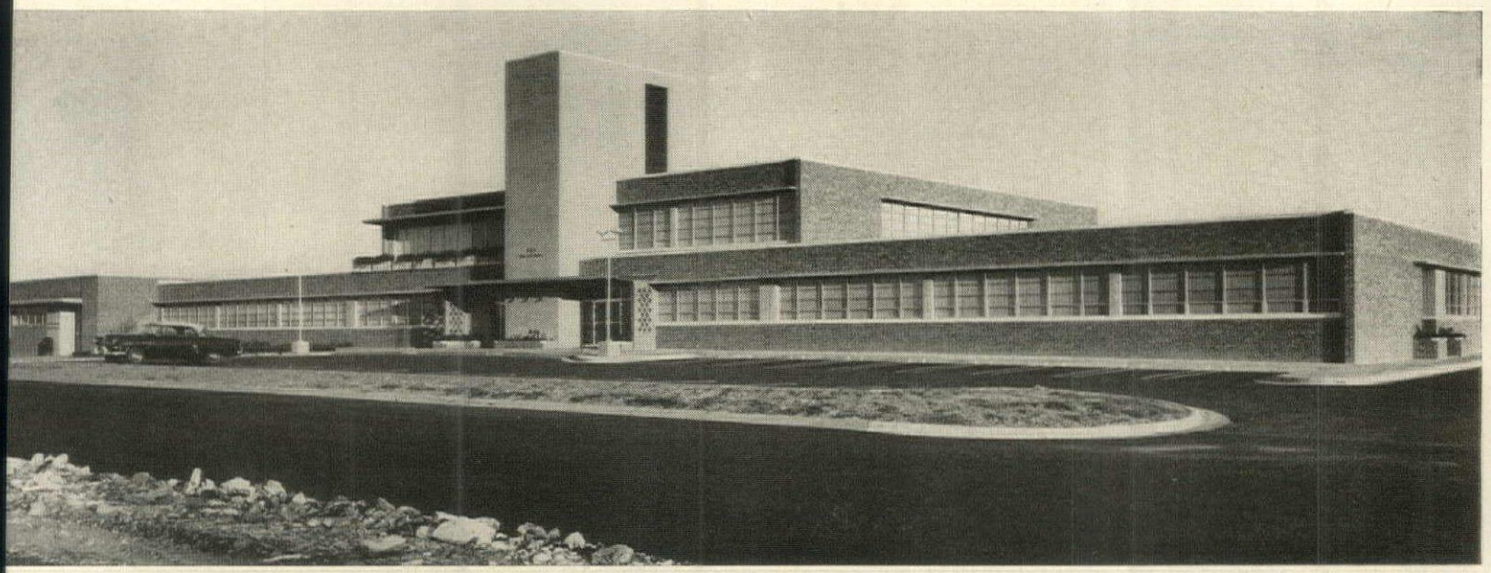
CONTINENTAL OIL CO. LABORATORY, Ponca City, Okla. Engineers & Constructors: WIGTON-ABBOTT CORP., Plainfield, N. J. Rotary Oildraulic Elevator sold and installed by Elevator Sales & Service Co., Inc., Oklahoma City.

The modern elevator

Rises to 55 Feet—For many of today's modern buildings the Rotary Oildraulic Elevator is the most economical and satisfactory lift for both passenger and freight service. Available with any type of control and in complete range of sizes.

SANTA MONICA MEDICAL ARTS BLDG. Architect: WELDON J. FULTON, Santa Monica. Contractor: POZZO CONSTRUCTION CO., Los Angeles. Rotary Oildraulic Elevator sold and installed by Elevator Maintenance Co., Ltd., Los Angeles.





Lower Construction Costs—The entire weight of the Rotary Oildraulic Elevator and its load is supported from below by a dependable oil-hydraulic system. This permits substantial lightening of the hoistway structure and reduces building costs.

WYNNEWOOD PROFESSIONAL BUILDING, Dallas, Texas. Architects: ROSCOE DeWITT and A. B. SWANK, JR. Contractor: WYNNEWOOD DEVELOPMENT CORP. Rotary Oildraulic Elevator sold and installed by Hunter-Hayes Elevator Co., Dallas.

for modern buildings

Rotary Oildraulic® Elevators help you achieve improved building design at lower cost

The high-efficiency Rotary Oildraulic Elevator is supported, moved and controlled by an oil-hydraulic jack. Thus, it imposes no load on the overhead building structure. Expensive penthouse and heavy load-bearing sidewalls are unnecessary. Complete flexibility in power unit location offers additional economies and helps the architect utilize space to better advantage.

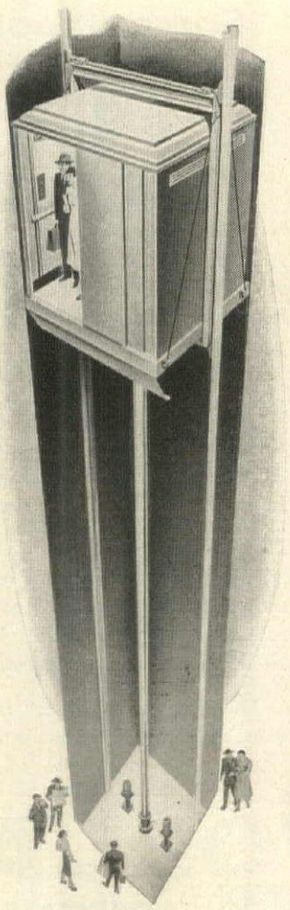
Smooth starts, accurate landings

The Oildraulic Controller, an exclusive Rotary development, combines the functions of eight control valves to assure velvet-smooth starts and cushioned stops. Automatic floor leveling with 1/4" accuracy is guaranteed. The Oildraulic Controller also simplifies maintenance and adjustment.

Coast-to-coast service

The dependability and economy of Rotary Oildraulic elevators and lifts have been proved in more than 100,000 units installed and serviced by a nationwide distributor organization. Our engineers will be glad to assist you on preliminary plans and specifications.

Write for passenger and freight elevator catalogs and architectural data.

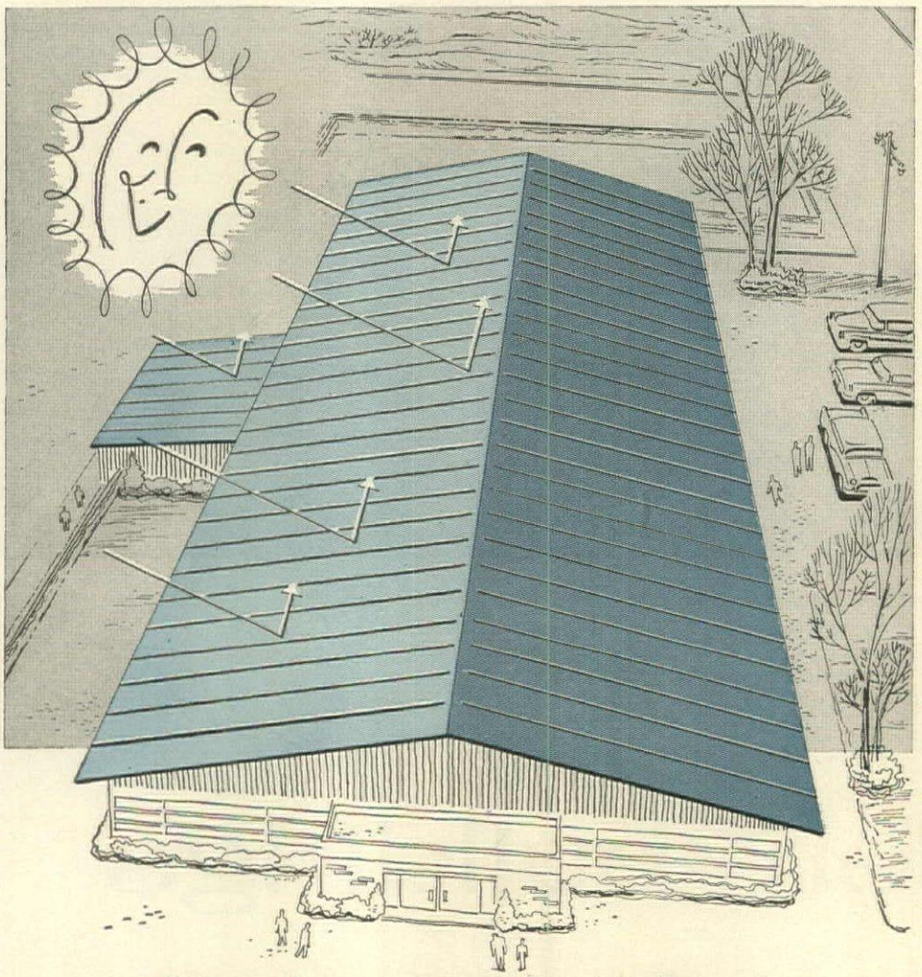


Rotary®

Oildraulic® Elevators

PASSENGER AND FREIGHT

Engineered and built by Rotary Lift Co., 1012 Kentucky, Memphis 2, Tenn.
Specialists in oil-hydraulic elevators and lifts.
See our catalog in Sweet's.



Some important facts about

REFLECTIVITY

and FOLLANSBEE TERNE

A National building magazine reported not long ago that a smooth, white-painted roof surface would reflect about 68% of the sun's heat compared with 5% by a dark roof. That's a much higher percentage of reflectivity than reported for any other kind of roof, painted or unpainted, metal or non-metal . . . *and, we think, a powerful sales story for Follansbee Terne Roofs.*

Smooth-surfaced, *long-lasting* Terne really holds paint—and Terne is the versatile roofing material that allows you to put design in the roof. With it, you can plan a flat surface and either horizontal or vertical shadow lines.

When you think of air conditioning for any building or house, remember the reflectivity of a white or light-colored Terne roof . . . remember its weight (only 77 pounds per square) . . . and specify Follansbee Terne, the proven roofing metal.

There are many other facts about Follansbee Terne you will want to know. Why not write for them today?

FOLLANSBEE

STEEL CORPORATION

FOLLANSBEE, WEST VIRGINIA

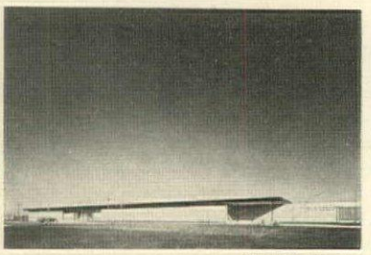
Cold Rolled Strip • Terne Roll Roofing • Polished Blue Sheets & Coils

Sales Offices in Principal Cities

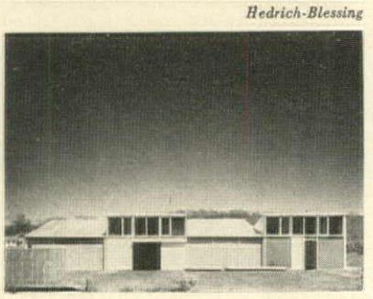
(PARENTHESES)

continued from p. 60

taken on sunny days, the sky possesses dark, inexplicable significance. This is just a trick of putting a filter before the lens of the camera, but it may yet label our age. Clouds are not clouds; they are sudden dramatic puffs of white skidding against a morbid background. Cornices, facades,



Hedrich-Blessing



Ben Schnall

cooling towers glow with the whiteness that normally should appear only before a rain squall. It's all in the filter.

But below, perhaps to prove the rule, is an architectural photograph with a *light* sky, the "Para-cap," the first H-bomb shelter ever erected in a speculative house, featured this year by the Houston Home Builders' Assn. in their Parade of Homes. The caption is theirs:

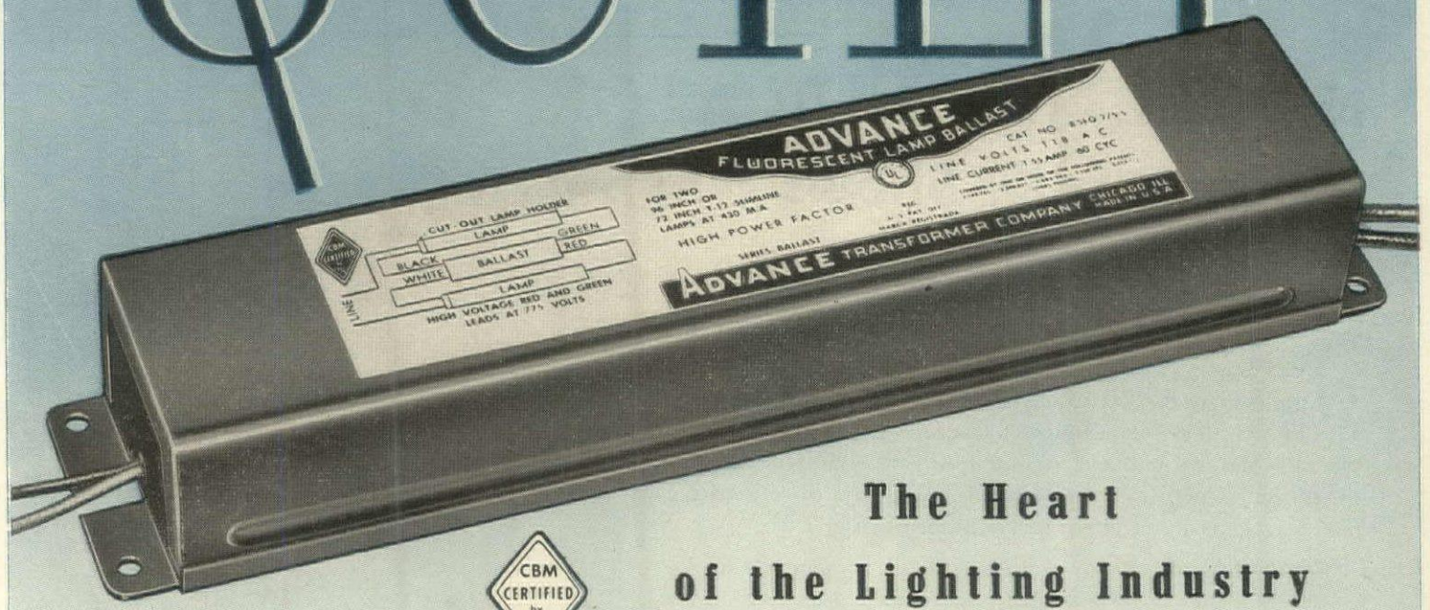


"Entrance to the H-bomb shelter built in the back yard of one parade home. Mr. and Mrs. John Christmas and their two children lived in the shelter for three days during the parade. The $4,000 steel and concrete structure can also be used as a playroom or extra bedroom." —W. McQ.

MAXIMUM EFFICIENCY • OPTIMUM PERFORMANCE • LONGER LIFE

QUIET





The Heart of the Lighting Industry

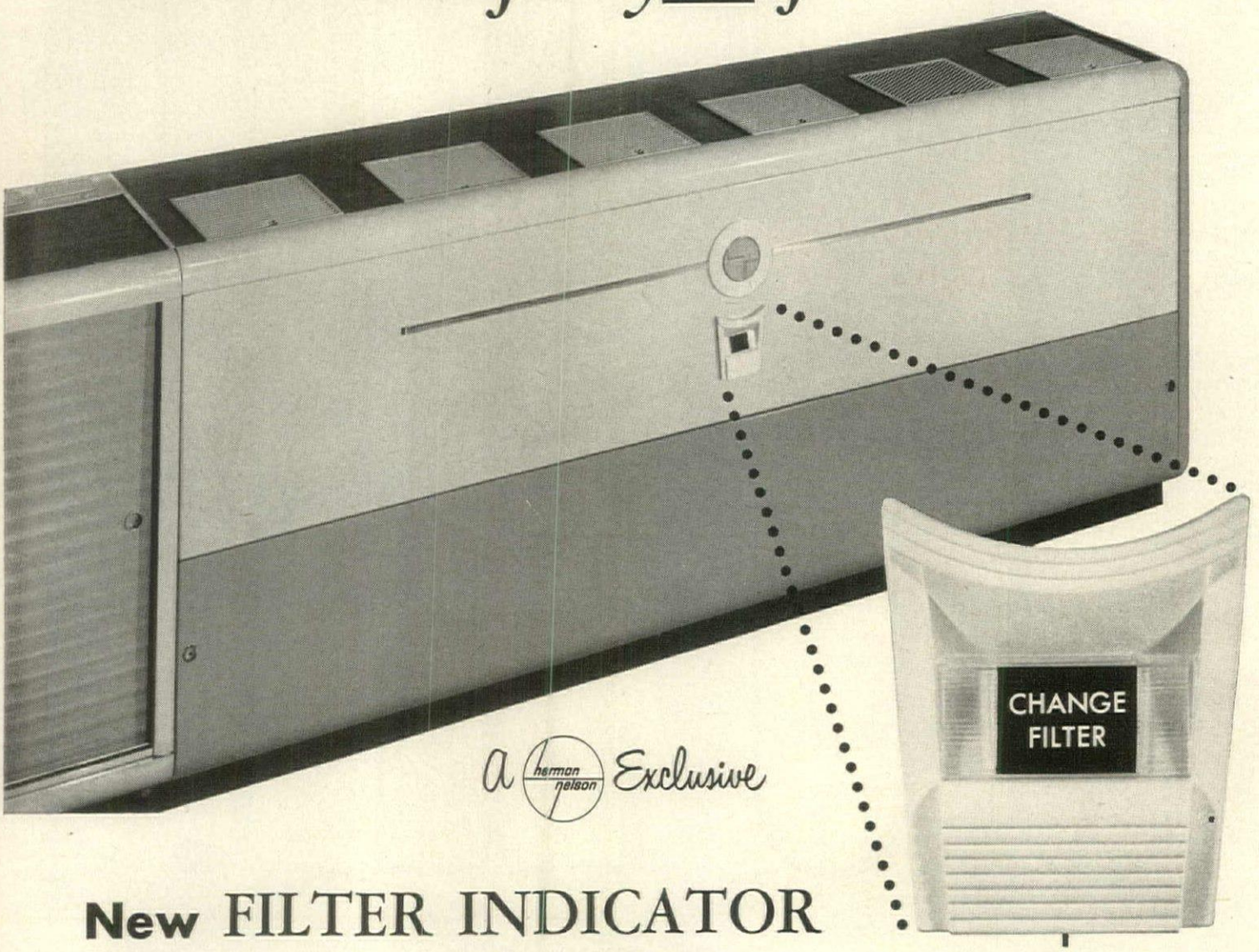
CBM CERTIFIED by UL

Write for
FLUORESCENT LAMP BALLAST BUYERS' GUIDE
giving complete technical data on over 180 precision-built quality ballasts.

ADVANCE
WORLD'S LARGEST MANUFACTURER
DEVOTED *Exclusively* TO THE PRODUCTION OF
FLUORESCENT LAMP BALLASTS

ADVANCE TRANSFORMER CO.
2950 N. WESTERN AVE., CHICAGO 18, ILL.

Dividends for you from advanced



a herman nelson Exclusive

New FILTER INDICATOR Automatically Shows When Filter Is Dirty!

HERE'S a practical feature that solves the problem of *when* to change the classroom filter in unit ventilators. The FILTER INDICATOR eliminates all guesswork. The very second the filter has accumulated its dust load, the vivid red "Change Filter" notice pops into the picture—and it *stays* there until the filter is removed and either reconditioned or replaced.

The location of the unit ventilator, amount of outdoor air filtered and length of time in operation *all* have a bearing on the effective life of a filter. Until now, filters were changed on a hit-and-miss guesswork basis—some too soon, most too late. With the FILTER INDICATOR, you change the filter when it *should* be changed—no sooner, and certainly no later.

Here's a money-saving feature, that makes absolutely sure that every bit of the efficiency *built into* Herman Nelson Unit Ventilators is *achieved* continuously in every installation.

Provides
COOLING, HEATING
VENTILATION, ODOR CONTROL
DRAFT ELIMINATION
All at minimum cost

herman nelson
UNIT VENTILATOR PRODUCTS

AMERICAN AIR FILTER COMPANY, INC.

SYSTEM OF
CLASSROOM COOLING, HEATING AND VENTILATING

lesign!

a herman nelson *Exclusive*

Renewable Filter Cuts Service Costs in Half!

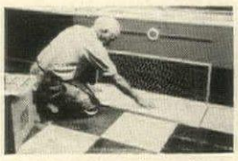
Herman Nelson AMERglas renewable filters combine the best features of a permanent filter with the time and money-saving advantages of a replaceable filter. By utilizing permanent frames and throw-away media, the cost of classroom filters is just about half that of complete replaceable filters. Just four easy steps and the filter is restored to original efficiency—



1. Remove the aluminum filter frame from the unit ventilator and dispose of soiled media.



2. Pull out desired length of clean AMERglas media from self-dispensing carton and cut with scissors.



3. Insert the clean filter media in the frame and lower hinged top into position.



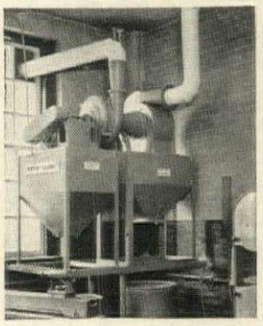
4. Replace the filter frame in the unit ventilator. It's ready to go.

+ A Host of Other Time and Money Saving Features

- **Access grilles in top—For oiling of end bearings and motor without removing front of unit or any panels.**
- **Removable discharge grilles—For cleaning fans and fan housings without removing front panels.**
- **Split front panel—Allows removal of soiled filter by removing small, easy-to-handle lower panel.**
- ***All* filters for Herman Nelson Unit Ventilators are one-piece filters. Just one piece to remove, one piece to clean or replace.**
- **Herman Nelson units are protected by famous Bonderite corrosion resistant paint base, then finished in beautiful, long-lasting, mar-resistant baked enamel.**
- **Utility cabinet tops are now available in stainproof plastic laminate as well as linoleum.**
- **Motors are direct drive (no belt replacement), and except for oiling, completely maintenance-free.**

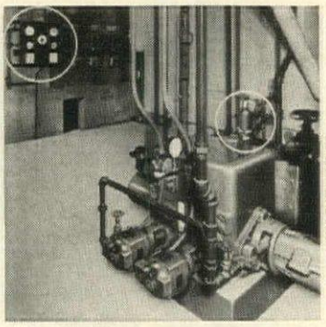
Herman Nelson's continuing concentration on *maintained performance* means time and money saving dividends to you. It's little wonder that architects specify Herman Nelson Unit Ventilators without qualification, and that budget-minded, performance-conscious school officials are Herman Nelson's best customers. For complete information, see our catalog in Sweet's Architectural File, or mail coupon.

OTHER AAF herman nelson SCHOOL PRODUCTS



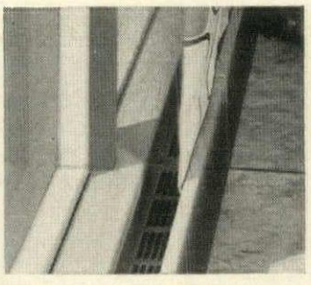
KEEPS WOODWORKING SHOP SPIC AND SPAN

Type D ROTO-CLONE collects chips and sawdust from woodworking equipment at St. Bernard High School, Cincinnati, Ohio. The unit is self-contained and requires little floor space.



BALANCES HEAT AND BUDGETS

Illinois Selectotherm—an automatically controlled high vacuum steam heating system which through single dial control, balances heat supply against heat loss in many school spaces.



COMFORT WITHOUT CONFUSION IN THE AUDIO-VISUAL CLASSROOM

Herman Nelson Light|Stop accessory permits operation of unit ventilator in darkened classroom — prevents discharge air from billowing curtains and causing distracting light streaks.

AMERICAN AIR FILTER CO., INC.
Dept. AF-12
Louisville 8, Kentucky

I would appreciate receiving literature describing the following products—

- ☐ Filter Indicator
- ☐ Renewable Filters
- ☐ Illinois Selectotherm
- ☐ Dust Control for Woodworking Shops
- ☐ Light|Stop Curtain Accessory

Name_____

Address_____

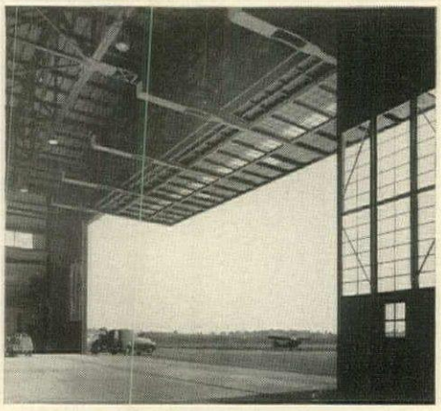
City_____ State_____



Byrne Canopy Hangar Doors for 18 Air National Guard Hangars

Byrne Vertical Lift Canopy Doors meet every specification demanded by military standards for a door that is structurally sound, fast-acting, weather-tight, dependable, safe and economical in operation. In addition, they allow full use of all space in the enclosed floor area. In fact, by forming canopies they actually increase the effective working space.

These canopy doors can be made in sections for any width of opening and may be operated individually or simultaneously. They are motor operated, upward-acting with balanced suspension through cables which transmit dead loads to compact counterweights.



Hangar for the Alabama Air National Guard has a Byrne Vertical Lift Canopy Door 78′ wide by 32′7″ high. The canopy door is flanked on both sides by two sliding doors 13′ wide—which are used to admit planes larger than usual.

Byrne Doors, Inc., with over 25 years experience in the development and manufacture of doors for the aircraft industry, can meet any requirements for hangar doors. The complete line of Byrne hangar doors includes the Vertical Lift Canopy, the Type B Canopy for openings up to 120′ wide by 30′ high, the Type K Canopy for heights up to 55′ with single sections up to 150′ wide and the Motorized Slide Doors. For complete information on the Vertical Lift Canopy Doors or other types available, check Sweet's Catalog or write direct to Byrne Doors, Inc.

CURRENT INSTALLATIONS:

Bangor, Maine
Burlington, Vermont
Reno, Nevada
Wrightstown, N. J.
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Montgomery, Alabama
Houston, Texas
Springfield, Ohio
Fort Smith, Arkansas
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BYRNE doors, inc.

1603 E. 9 Mile Road, Ferndale, Detroit 20, Mich.

Dept. F-13

101 Park Ave., New York 17, N.Y.
Cafritz Bldg., Washington 6, D.C.
Byrne Doors, Ltd., 61 Avenue Road, Toronto, Ont.

LETTERS

21st CENTURY CAMP



Forum:

. . . An orchid for the excellent job that you have done on the *Herald-Tribune*'s Fresh Air Fund Camp at Fishkill (AF, July '55). The combination of pictures, diagrams and interesting copy goes a long way toward presenting an excellent introduction to this twenty-first-century type of camp.

GERALD P. BURNS
New York, N.Y.

Forum:

Any camp planned by Julian Salomon will be a success. Architect Barnes also did a marvelous job with the camp buildings. The refreshing atmosphere produced by the buildings and trees certainly creates a welcome haven for city kids.

HOWARD M. WILLIAMS
Director of Building Service
Boys' Club of America
New York, N.Y.

Forum:

I have read with a great deal of interest the article in the FORUM on "Architecture Goes Camping." This is the kind of forward thinking that needs to be done in the area of camping and your publication is to be congratulated on taking this kind of leadership.

We have some 500 camps throughout the country. I would like to furnish each camp with a copy of the article.

JOHN A. LEDLIE
Secretary for Youth Program and Camping
National Council of the YMCA

Forum:

The new concept of designing camp buildings is certainly a great improvement in many ways. The plan for the sleeping tent is particularly ingenious as well as practical.

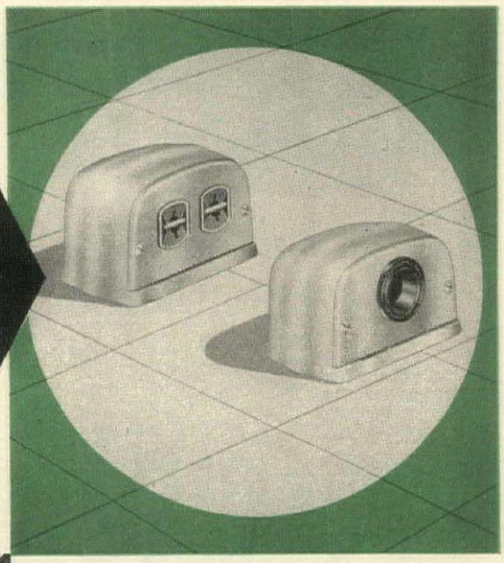
However, in common with many reputable camp directors who have spent their lives in the profession, we cannot approve of the concept that counselors should not live with the children in their tents or living quarters.

We hope the camp counselors and leaders are as proficient as the buildings are handsome.

BARBARA ELLEN JOY
The Joy Camps
Wausau, Wis.

continued on p. 76

HERE'S WHERE YOU *Save* THE OWNER MONEY





New service fittings add to Nepcoduct convenience and economy

National Electric's streamlined service fittings are especially designed for installation where modern desks and free-standing equipment restrict the height of service fittings.

A simplified one-piece housing cuts installation time. Replacement inventory is reduced because the housing is designed to accommodate cover plates for any service.

A Nepcoduct system provides for complete efficiency in office layout by making available as many outlets as needed . . . positioning these outlets where they can best serve the owner's requirements.

Nepcoduct is available as a single, double or triple duct system for power or light, inter-communications and telephone . . . fits any type of floor construction.

Write for more information on Nepcoduct Electrical Raceways Systems.

NATIONAL ELECTRIC PRODUCTS CORP. PITTSBURGH, PA. 50TH ANNIVERSARY 1905–1955

National Electric Products

PITTSBURGH, PA.

3 PLANTS • 10 WAREHOUSES • 36 SALES OFFICES

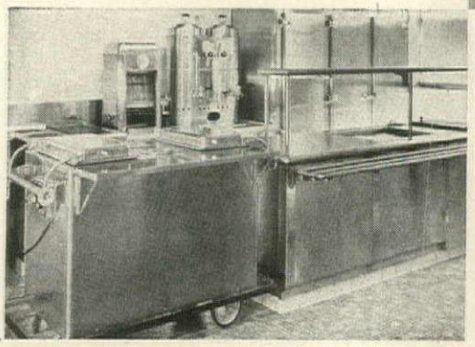
A-8352

ideas

from Blickman-Built award-winning food service installations

sanitary construction lowers maintenance costs

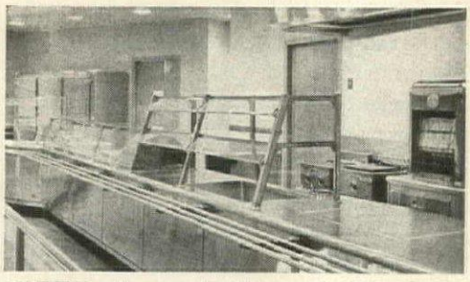
AT BAYLOR UNIVERSITY HOSPITAL, DALLAS, TEXAS



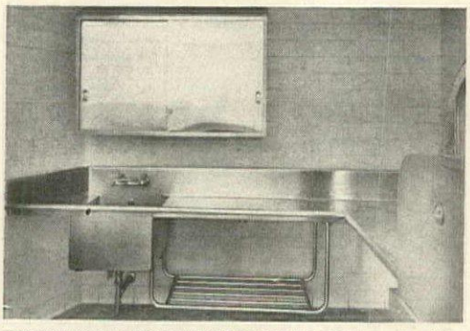
FLOOR PANTRY—showing Blickman-Built food conveyor. Note stainless steel serving counter with round-corner bottom. Pantries have complete service facilities.



GENERAL VIEW OF MAIN KITCHEN — showing food conveyors lined up opposite cook's tables. When loaded, conveyors are wheeled to elevators and taken to individual floor pantries. Stainless steel cook's table typifies sanitary construction of all equipment, featuring round corners, rolled edges, seamless crevice-free surfaces. Note built-in bain marie.



CAFETERIA—close up of stainless steel serving counter. Round-corner bottom, seamless top, welded tray slides, elimination of horizontal trim—all promote cleanliness.



FUNCTIONAL DESIGN AIDS SANITATION in main dish pantry. Stainless steel clean dish table with built-in round-corner sink. Wall-mounting eliminates leg obstructions, facilitates cleaning. Welded tubular undershelf is suspended from dish table, leaving floor clear.

• The stainless steel equipment in this prize-winning installation features construction details which reduce time and labor required for cleaning. For example, wall-mounting of sinks and dish tables leaves floor areas unobstructed for rapid, thorough cleaning. Stainless steel pipe enclosures prevent accumulation of dirt and grease on inaccessible surfaces. Welded tubular undershelves are readily cleaned on all surfaces. Round-corner sinks, rolled edges and seamless stainless steel surfaces facilitate cleaning by eliminating dirt-collecting crevices. Such details help maintain the highest standards of hospital sanitation. In addition, durable welded structures assure years of repair-free service life. Maintenance costs are low as a result.

The installation serves approximately 55,000 meals every month to patients and employees. Service to patients is handled through a well-planned decentralized system. Pre-heated food conveyors are loaded with bulk food in the main kitchen and transported to individual floor pantries. There, trays are set up and distributed to patients.

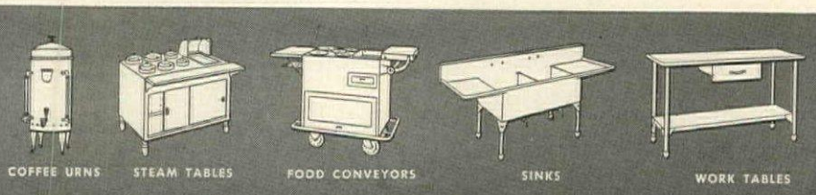
Designed and equipped by S. Blickman, Inc., this installation won a Merit Award in a recent Institutions Food Service Contest. You, too, can realize substantial savings in labor and maintenance costs by specifying "Blickman-Built."



***Send for illustrated folder** describing Blickman-Built Food Service Equipment — available in single units or complete installations.*

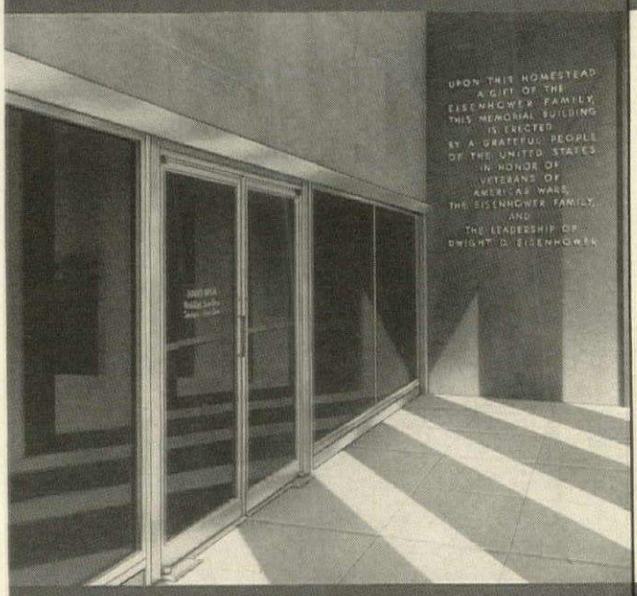
S. Blickman, Inc., 5812 Gregory Ave., Weehawken, N. J.

Blickman-Built
FOOD SERVICE EQUIPMENT
EST. 1889



The Kawneer Touch

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Dependability instills confidence...and you can depend upon Kawneer products to give the lasting satisfaction your designs deserve.

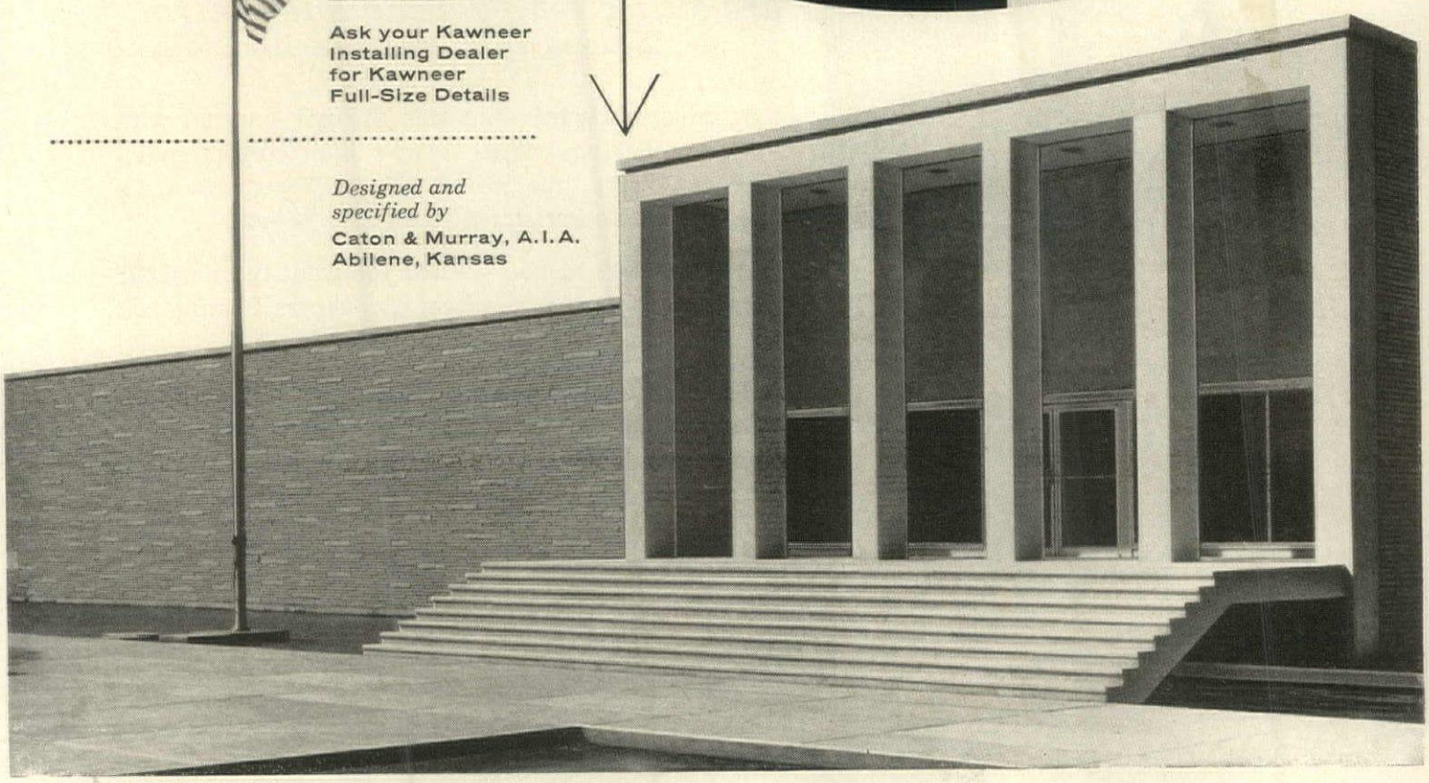
The painstaking care of skilled craftsmen guide every installation of Kawneer products to insure that your detailed, specified designs are followed "to the letter". A notable contribution to the grace and beauty of the Eisenhower Memorial in Aberdeen, Kansas, is its entrance...another Kawneer Touch.

Kawneer representatives will be happy to assist with building front information, to furnish full-size details, etc., and suggest reliable sources for prompt bids. You'll find the Kawneer dealer nearest you under "Store Fronts" in your telephone directory. Or, write Kawneer, Niles, Michigan. No obligation, of course.

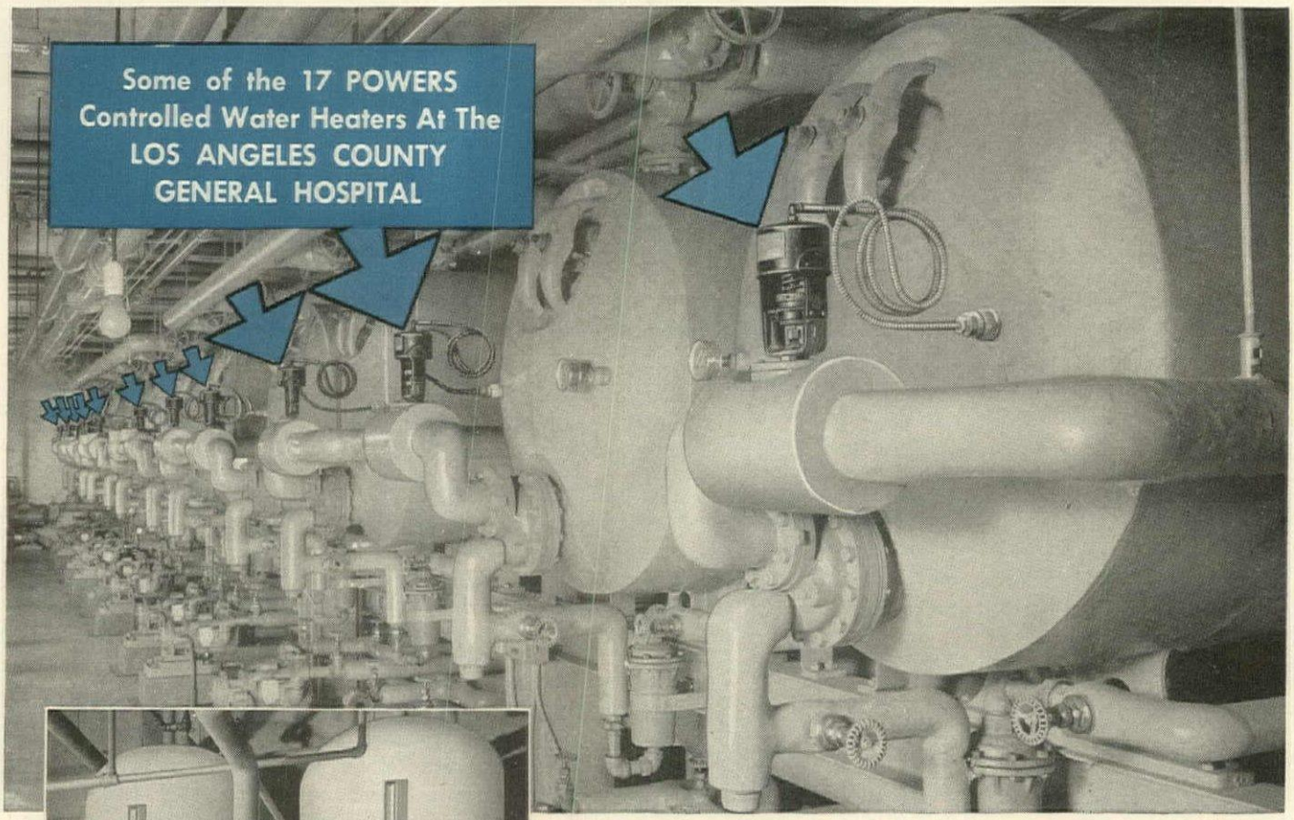


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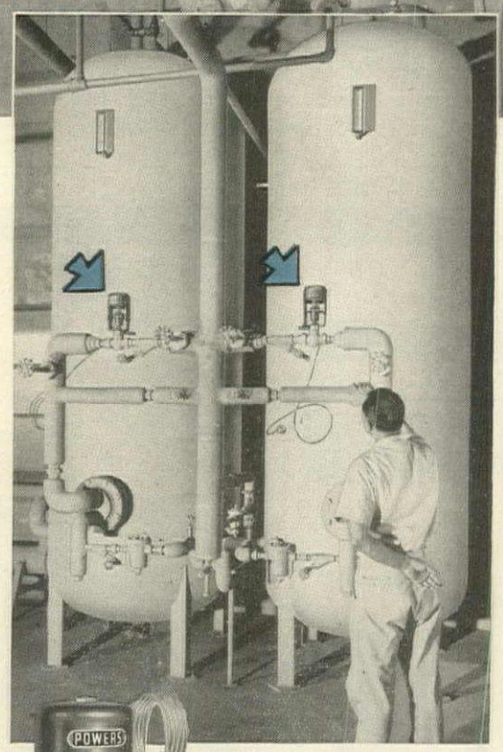
Kawneer
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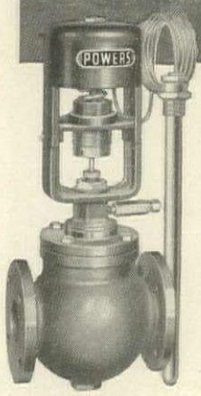
Designed and specified by
Caton & Murray, A.I.A.
Abilene, Kansas



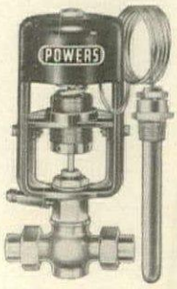
In 1933 Howe Bros., Contractors, installed 15 Powers Regulators here. All are still in operation, only 11 are shown in photo above.



Above: 1955 installation of Powers Controlled Water Heaters in Contagious Disease building. Contractor: E. Willardson Company.



(c48)



POWERS No. 11 Self-Operating TEMPERATURE REGULATORS
Give Better Control • Last Longer • Save More Money

"after 22 Years *of good service*

POWERS No. 11 Self-Operating TEMPERATURE REGULATORS

are still giving dependable control"

Reports Mr. Louis J. Koch, Senior Master Mechanic

Performance records like this are not unusual with Powers regulators. With today's high cost of maintenance Powers time proven QUALITY controls are a more profitable investment than ever before.

More POWER$ to You — when you want thermostatic control for water heaters, heat exchangers, heating and air conditioning systems or processes.

Automatic control pays big dividends . . . *IF* you have the right type of control and proper size valves for your requirements. Make sure, call POWERS nearest office for help with your problems.

POWERS CONTROL

THE POWERS REGULATOR COMPANY

SKOKIE, ILLINOIS | *Offices in chief cities in U.S.A., Canada and Mexico*

Over 60 years of Automatic Temperature and Humidty Control

Architects & Engineers: **Welton Becket & Associates** • General Contractor: **Del E. Webb Construction Co.** • Plumbing Contractor: **Scott Co.** • Plumbing Wholesaler: **Grinnell Co. of the Pacific**





No need to dip your toe in this king size pool to test its temperature. Just dive right in and enjoy its filtered, comfortable water. It's thermostatically controlled by Powers.

In the Sumptuous **BEVERLY HILTON**

BEVERLY HILLS, CALIFORNIA

POWERS **THERMOSTATIC CONTROLS**
Regulate Temperature of Swimming Pool, Showers, Shampoos and Water Heaters

With its new world standards for hotel luxury, service and hospitality, the Beverly Hilton has provided its guests with the ultimate in comfort and safety in its Powers thermostatically controlled showers, shampoos and swimming pool.

More Powers to You when you want controls of superior quality that give years of dependable performance. Benefit from Powers more than 60 years of experience in temperature control. Call our nearest office or write us direct for aid in selecting the right type of control for your requirements.

(c47)



Safe, Comfortable Showers, 450 of them in the hotel and colorful pool side cabanas, are thermostatically regulated by Powers. There is no danger of scalding or unexpected shots of cold water.

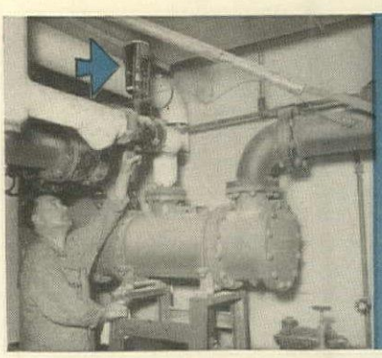


No Danger of Scalding in the Barber Shop Shampoos. They're safetyized by Powers.

THE POWERS REGULATOR COMPANY

SKOKIE, ILLINOIS | *Offices in chief cities in U.S.A., Canada and Mexico*

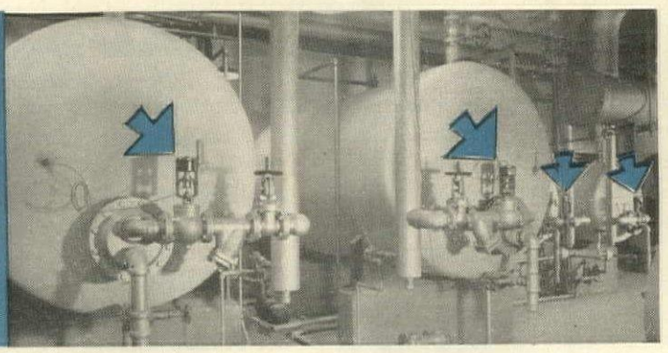
Over 60 years of Automatic Temperature and Humidity Control



5 of the 8 Powers Controlled Water Heaters

Heat Exchanger, left, supplies properly tempered water to swimming pool.

Water Storage Heaters, right, are also controlled by Powers No. 11 Self Operating Temperature Regulators.





This Unretouched Photograph Proves the Quality of

FERALUN

SAFETY TREADS

This is an unretouched photograph of a Feralun tread taken after acid treatment. (Paint is removed and acid is used to eat away the metal base so as to isolate the actual abrasive content of the tread.) Note the full and even distribution of abrasive — for greater safety, longer wear. In fact, American Abrasive has set the quality standards shown above. That's why Feralun abrasive treads cannot be equalled.

Feralun has provided lasting safety — free from maintenance for the past 35 years. Available as treads, thresholds, floor plates and elevator sills. Also in Bronzalun, Alumalun and Nicalun. See Sweet's Catalog 1955—12b/Am.

AB 126

AMERICAN ABRASIVE METALS CO. • IRVINGTON 11, N.J.

LETTERS

Continued from p. 70

Forum:

The structures designed by Mr. Barnes are particularly interesting. The *Herald Tribune* Fresh Air Fund is to be congratulated on its courage, particularly in the type of architecture selected, as well as accepting the unit idea of camping, or as it has been called in the Boy Scouts of America for many years, "Camping by Troops."

While doubtless the problems involved in providing camping for girls differ from those in providing facilities for boys, 11 years old or older, I do have a few questions about some of the structures, particularly the dining hall and village hall. The photographs show great areas of glass, which from the standpoint of light and appearance are good, but I am a little concerned as to what may happen to the roof of the dining hall under heavy snow load or wind pressures.

Doubtless for the purpose intended it will prove good, but I do not believe it would serve the Boy Scout program too well.

JOSEPH E. BISHOP, *director*
Engineering Service
Boy Scouts of America
New Brunswick, N.J.

ARCHITECTURE IN AMERICA

Forum:

Your article in the September FORUM, titled "Architecture in America," is extremely interesting and provocative. It summarizes the problem confronting architecture in the era of formidable expansion and terrific vitality.

WALTER F. BOGNER
Cambridge, Mass.

Forum:

A better analysis of the architect at midcentury than *The Architect at Midcentury*. You may not arrive at any easy solution, but you have trotted out the realistic and unpleasant facts to look at seriously.

Many educators within the profession are very much concerned about the implications of your subject for the universities. I hope that you will not neglect this side of the problem.

BUFORD L. PICKENS, *dean*
School of Architecture
Washington University
Saint Louis, Mo.

Forum:

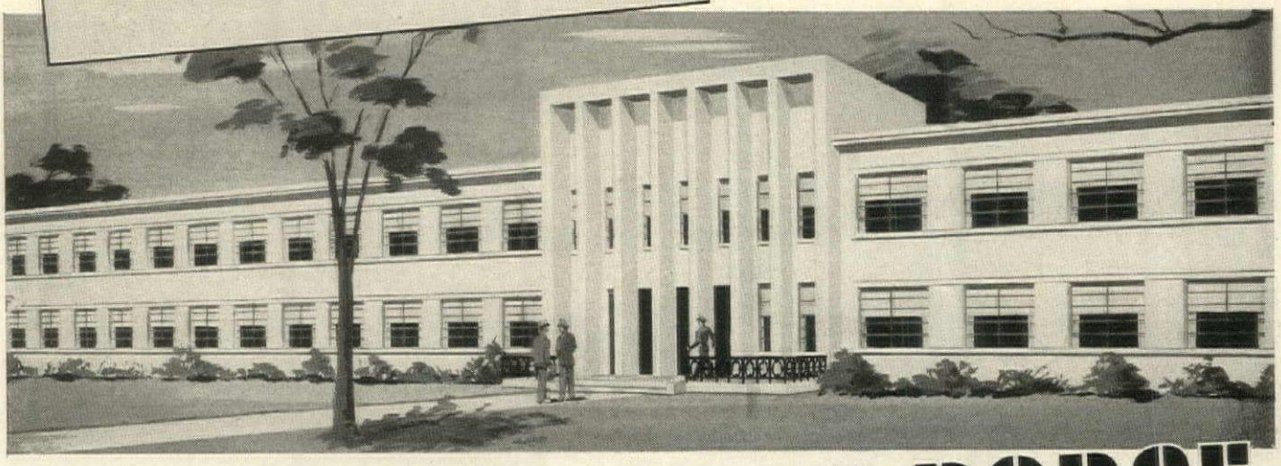
I appreciate your beginning article on "Architecture in America." You have started to put into coherent form the thoughts, observations and conclusions of many of us who are working architecturally in America and wondering where each individual effort should find its place. I am looking forward to further development of the subject.

But why was Feininger's fine picture of Shasta Dam printed reversed? Consider also how that single careless thumbprint enlarged on the Los Angeles freeway

continued on p. 82



New Buildings for USAF Air University...



WIRE BY PHELPS DODGE

Shown above are two of the four buildings recently finished for the Air Command and Staff School—largest school for the advanced education of Air Force officers—of the United States Air Force's Air University, Maxwell Air Force Base, Montgomery, Ala.

Reliable, long-life Phelps Dodge wire and cable, including Habirduct-Habirprene and Habirite-Habirprene, were specified and installed throughout all four buildings, which form the academic center of the famous Air Command and Staff School, to assure complete wiring satisfaction and trouble-free service.

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On every wiring job, large or small, where top quality materials, expert workmanship and experienced "know-how" are called for, *it pays to rely on Phelps Dodge and your Phelps Dodge distributor!*

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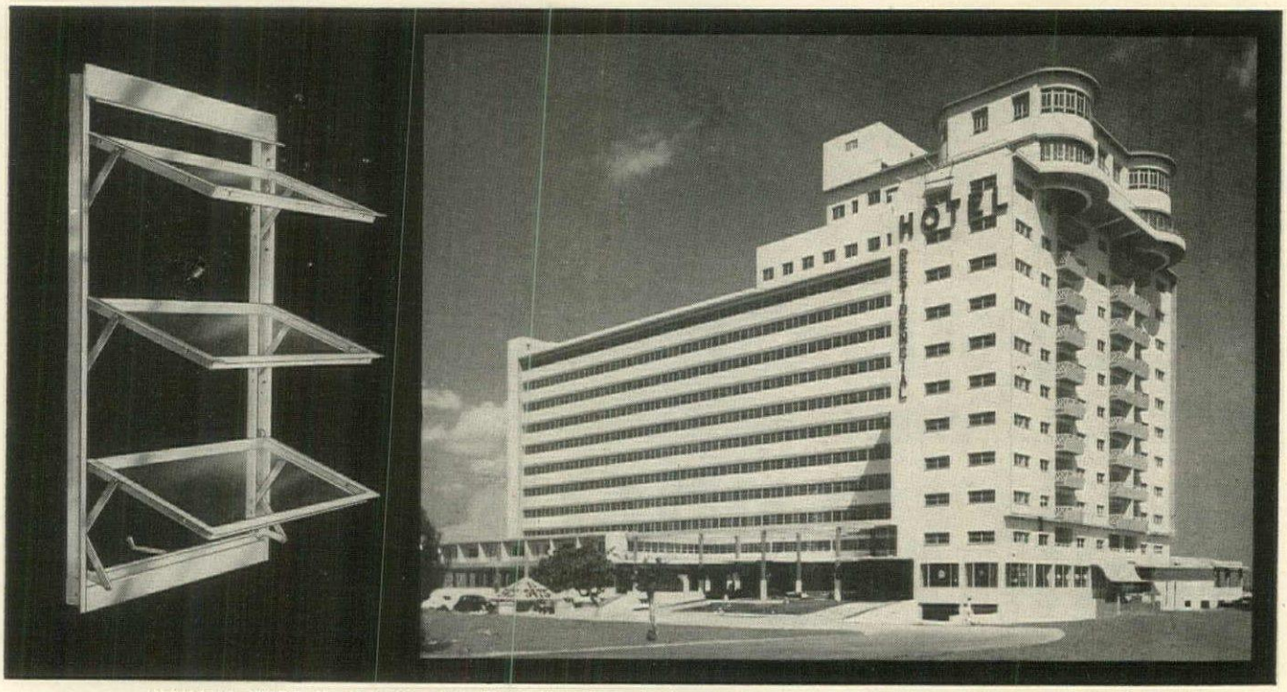
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HAVANA, CUBA Hotel Residencial, "Rosita" de Hornedo. Arquitectos: C. Martinez Marquez, Isidro Cordoves Jr.

Whatever your window needs be sure to get all the facts on this new window and the full Ware line . . . proven in thousands of installations throughout the hemisphere.

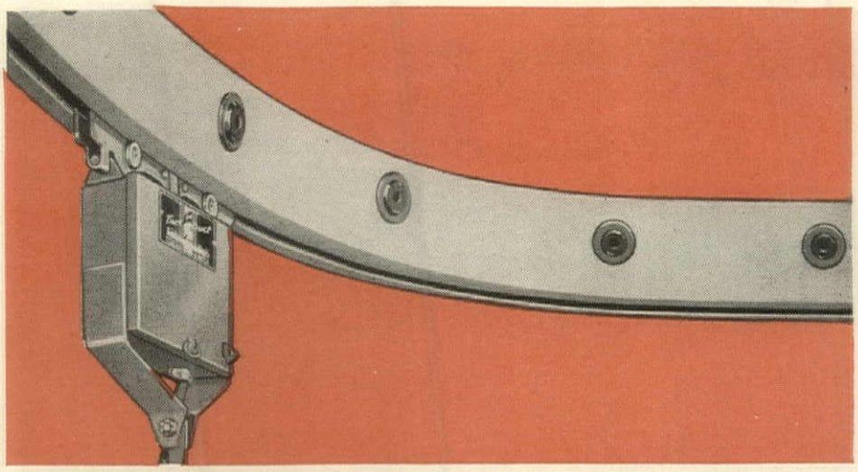
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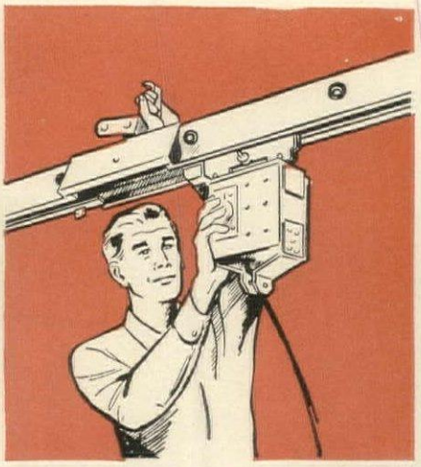


Ware Laboratories, Inc., 3700 N.W. 25th St., Miami, Florida

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They get a modern, flexible distribution system that pays off handsomely for years in increased production.

Get the complete story on Industrial Trol-E-Duct from your BullDog Field Engineer or qualified distributor, or write: BullDog Electric Products Company, Detroit 32, Michigan.

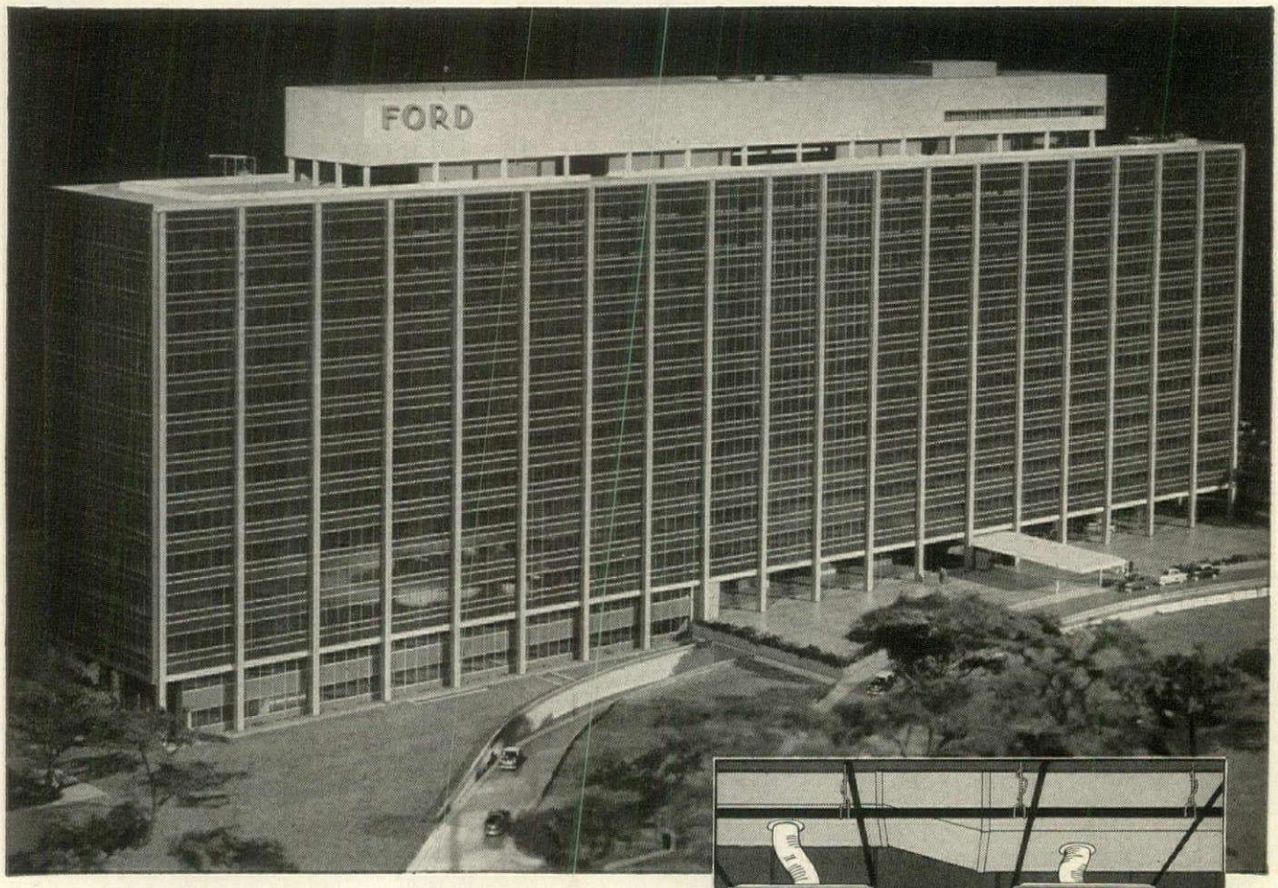
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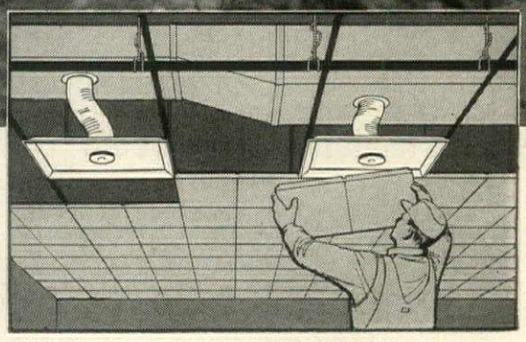
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A Division of I-T-E Circuit Breaker Company

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In addition Multi-Vent can handle as many as 60 air changes per hour and still maintain an even, draftless, low rate of room air motion!

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Ford Assembly Plant Office Building
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L. Rossetti Associated Engineers and Architects

SAN JOSE, CALIFORNIA
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Architects and Engineers: E. A. Fairbrother & Geo. H. Miehls, Detroit
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Light-, medium- or heavy-duty fastening, the new Model 455 Remington Stud Driver speeds the job. It sets *two* different size studs... up to 6 studs per minute, either size . . . and offers new possibilities in anchoring conduit clips, steel frames, wood forms and many other fixtures.

Powerful 22 and 32 caliber cartridges drive ¼" and ⅜" studs *solidly* into steel or concrete. For special medium-duty work, the smaller cartridge is used with the larger stud. Result: the greatest flexibility ever in a cartridge-powered tool! Just clip coupon for details.

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Easy change from one stud size to the other right on the job!

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AF-12

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Plaster-Weld is the scientific resinous water-emulsion bonding agent which gives you a guaranteed method of *permanently bonding* Gypsum, Lime-Putty, Acoustical Plaster and Cements to themselves . . . or *directly* to any structurally sound surface including—

Concrete ceilings, beams, columns . . . Plastered walls and ceilings . . . Stippled or textured walls . . . Painted or unpainted surfaces . . . Brick . . . Stone . . . Wood . . . Glass . . . Block . . . Metal . . . Slabs . . . Ceramic Tile

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The bond you make is permanent, ageless . . . the bond itself is much stronger than the material being bonded. Equal bonding permanence all climates, all types of surfaces, all sorts of conditions.

For details, see Sweet's File, write us direct, or ask your Building Supply Dealer.

LARSEN PRODUCTS CORP.,
Box 5756-B, Bethesda, Md.

LETTERS

Continued from p. 76

photo affects the photographers among your readers.

C. RAYMOND HUDSON, *designer and builder*
Redwood Valley, Calif.

Forum:

Your magazine is definitely one of the best in its field and I do not hesitate to go on record saying that I enjoy consulting it every month. But I wish to attract your attention on a mistake that was made in your last issue. You showed a picture of Shasta dam that had been reversed before printing, thence locating the penstocks and the power plant on the left bank of the river.

Mistakes happen to everybody. What baffles me, though, is that a blunder of such magnitude went all the way through without being noticed.

G. J. BLANC
Lombard, Ill.

• Henceforth FORUM will try to handle its pictures as carefully as its sharp-eyed readers look at them. —ED.

FIRE

Forum:

Congratulations to your staff people who put together the story on fire and building design in connection with single-story plants and warehouses (AF, Sept. '55). The subject has been very well covered.

HORATIO BOND, *chief engineer*
National Fire Protection Assn.
Boston, Mass.

• A second article on fire protection in multistory buildings appears elsewhere in this issue—ED.

INDUSTRY EDUCATION

Forum:

Your "For Better Building" editorial (AF, Aug. '55) finds us in a very receptive mood. For the past few years we have been experimenting with our Construction Management major—still somewhat timidly—along the lines suggested in your editorial. Our students find potential employers in the building industry very enthusiastic about the rounded training we offer.

BRUNO FUNARO, *assistant dean*
School of Architecture
Columbia University
New York, N. Y.

Forum:

Congratulations on your August editorial on education for the building industry. You have done yeoman service for the profession in stating it so broadly and so forcefully.

JAMES M. HUNTER, *architect*
Boulder, Col.

CORBU'S CHAPEL

Forum:

The newest Chapel of Notre-Dame-du-Haut (AF, Sept. '55) made the same first impression upon me as it did upon the villagers of Ronchant. I was not used to

continued on p. 88

NEW PORTFOLIO

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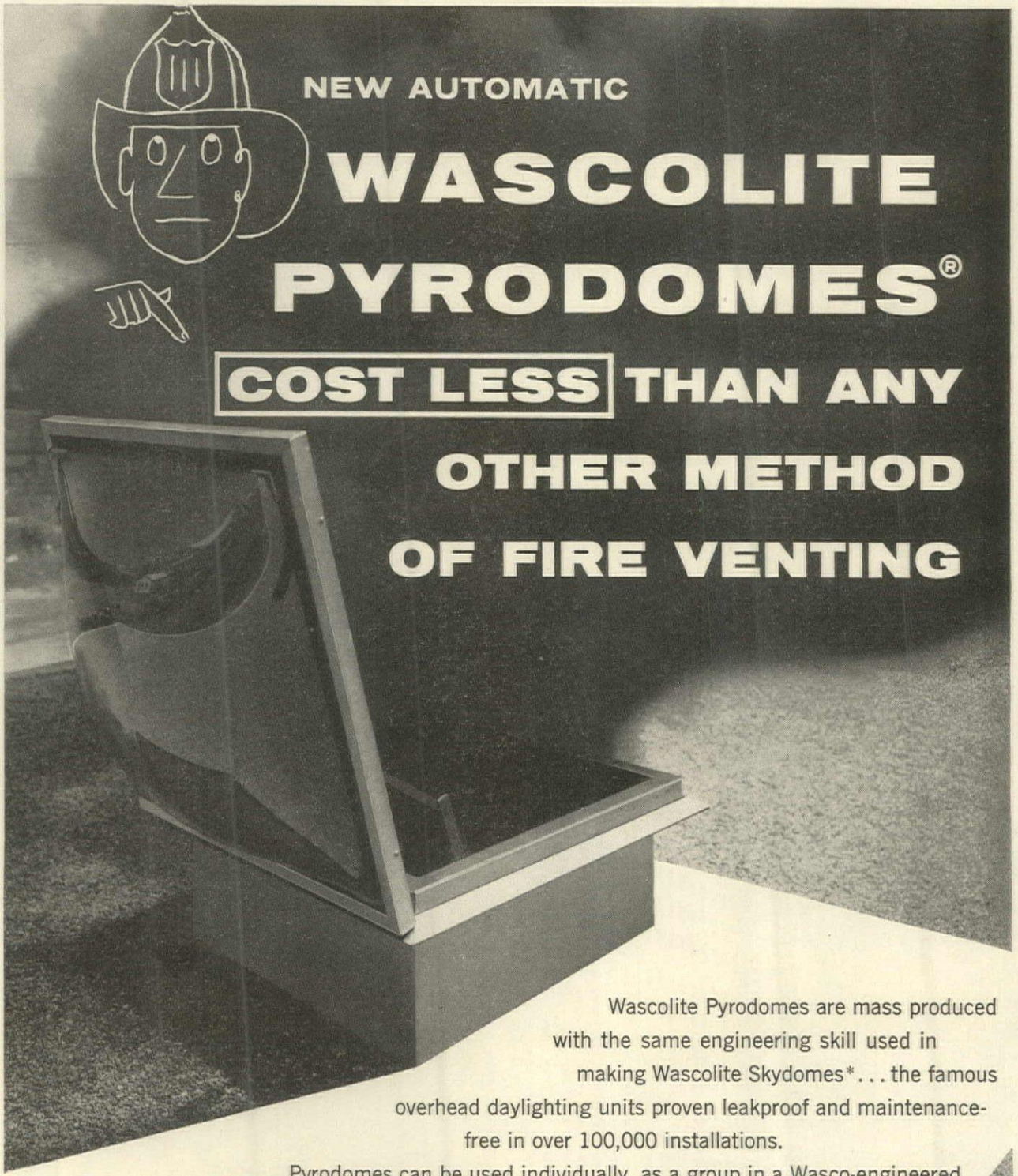
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Pyrodomes can be used individually, as a group in a Wasco-engineered pattern, or as a series abutted in a continuous line as a firebreak.

Wascolite Pyrodomes confine fires to the smallest possible area . . . at less cost than any other method of fire venting.

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John W. Galbreath Corporation, owner
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Stainless Steel skin

for largest metal-clad building in the world!



The next time you hit New York City, take special note of the bright new Socony Mobil Building at 42nd and Lexington, because this building is going to make history.

It's the 6th largest office structure in the world; and is completely clad with low maintenance Type 302 Stainless Steel. Directly across the street is the Chrysler Building, the first building to make major use of Stainless Steel for an exterior. Although it was erected in 1928, the Stainless on the Chrysler Building is still free from corrosion.

Stainless Steel sections can be thin, because it is so very strong, and no allowance for corrosion is necessary. Stainless Steel has such a high melting point that it will meet fire test requirements from inside *and* outside the building.

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As the producer of USS Stainless Steel, we have worked closely with the fabricators of Stainless Steel panels for curtain-wall construction. We'll be glad to send you further information and put you in touch with these fabricators. Write to United States Steel, Room 5054, 525 William Penn Place, Pittsburgh 30, Pa.

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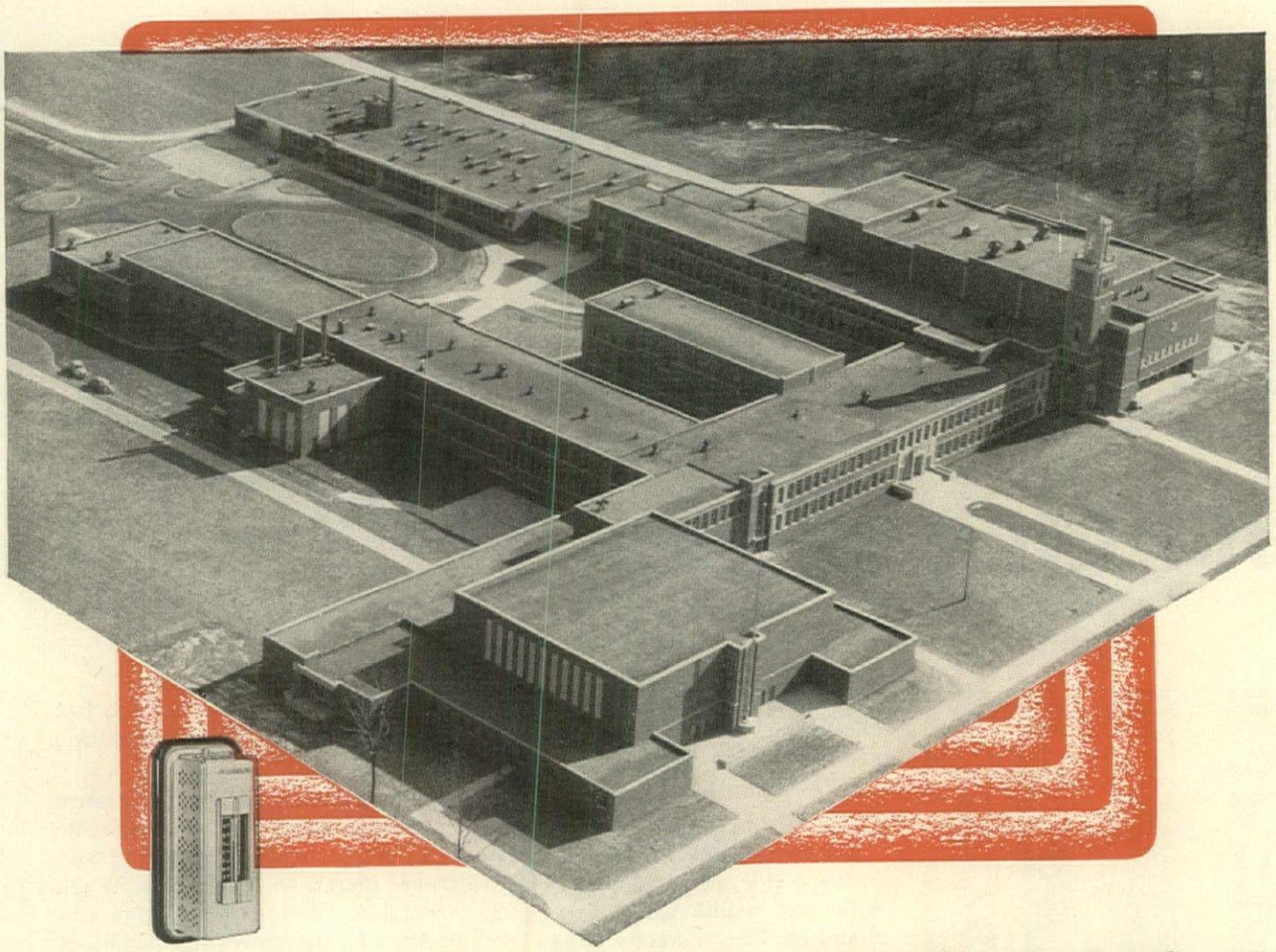
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UNITED STATES STEEL



RATE HEATING PLANT with JOHNSON CONTROL "Most Nearly Perfect"

Educational facilities at the new $5 million Senior High School* in Parma, Ohio, are widely acclaimed as among the nation's finest. Equally impressive are the building's mechanical features, notably its highly efficient heating and ventilating systems.

Comfort *could* be a real problem in this building. Its size alone creates special problems. So do the large number of rooms, which vary in area from little more than 100 square feet to more than 10,000 square feet. Other factors affecting comfort include the use and occupancy levels in such diversified locations as classrooms, offices, the 540-seat cafeteria and social center, the library, the 1,800 capacity auditorium and numerous others.

All of these problems, and more, are compensated for by a specially engineered system of Johnson Automatic Temperature Control which operates the heating and ventilating systems and insures ideal temperatures for every purpose.

Here's what George Rose, the school's engineer, has to say about it: "Our heating system is the most nearly perfect one I have seen. The automatic control system helps keep our fuel expenditures at a minimum. Yet it gives us the flexibility we need to satisfy all comfort requirements throughout the building. It also reduces the need for operating personnel and requires very little maintenance."

Any building—small or large, new or existing—can enjoy these same superior comfort and economy advantages of a Johnson engineered Control System. An engineer from a nearby Johnson branch will gladly discuss your temperature control problems and give you his recommendations without obligation. Johnson Service Company, Milwaukee 1, Wisconsin. Direct Branch Offices in Principal Cities.

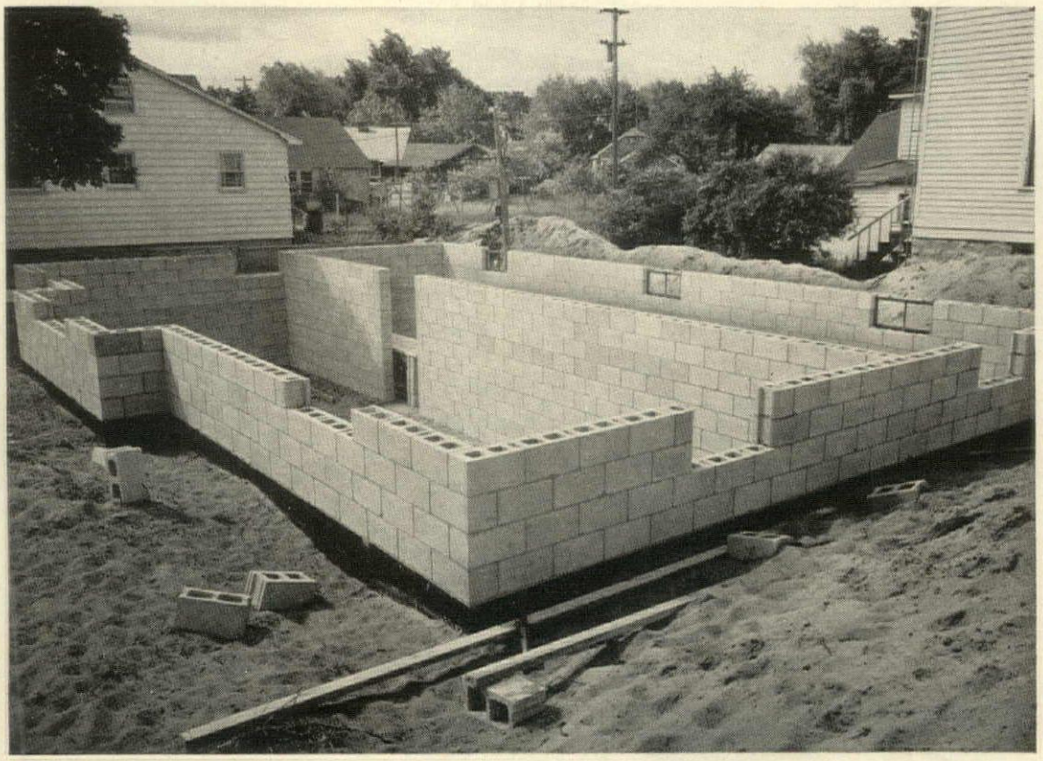
**Parma Senior High School, Parma, Ohio. Fulton, Krinsky & Dela Motte, architects; L. B. Mumma, mechanical engineer; The Feldman Brothers Company, heating contractor; all of Cleveland.*

JOHNSON CONTROL

TEMPERATURE ⇅ AIR CONDITIONING

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THE NEW BEAUTY OF CONCRETE MASONRY



Basement for a Vibrapac concrete block home. Note standard 8" units can be used in center of basement as a bearing wall, instead of using conventional steel posts.

"Lower Living Room" replaces basement in modern home building

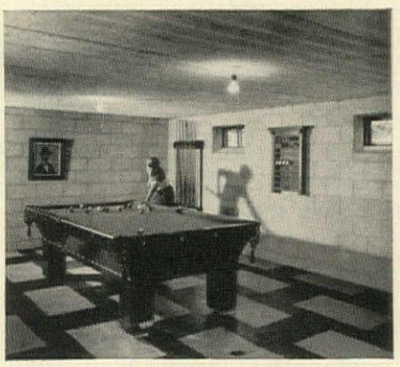
During the past few years, an overwhelming demand for housing influenced many builders to adopt home designs which could be erected quickly and economically. Such designs often eliminated the basement. Slabs and crawl space were substituted.

The importance of a good basement to sound planning for modern living continued to be apparent, however, as more and more homes were built. So much so that current building practice again emphasizes the basement as basic to a well designed home. The new concept of a basement's place in the home has much to do with this trend. No longer is the excavated area under a house regarded as a "cellar" . . . gloomy, poorly ventilated and usable only for furnace, water heater, laundry and odds and ends. The basement today is actually not a basement at all but a "lower living room." This change has come about through the use of modern scientific construction methods which keep the basement dry, cool and airy in summer and pleasantly temperate in the coldest weather. In consequence, living rooms, studios and even bedrooms are all on the below-ground level in many of the most attractive and comfortable homes being built today.

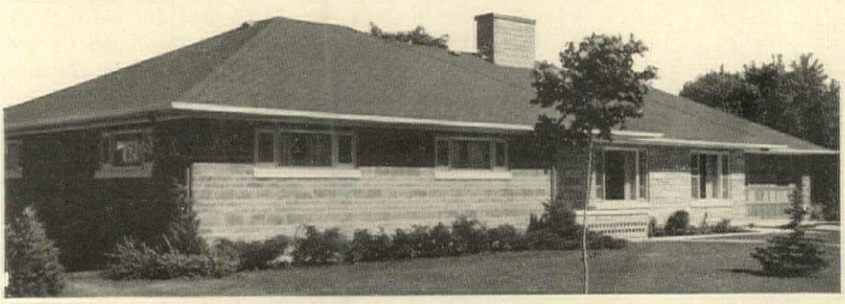


Corner nook in a modern basement recreation room.

Today's basements are cool and comfortable in summer . . . warm and dry in winter.



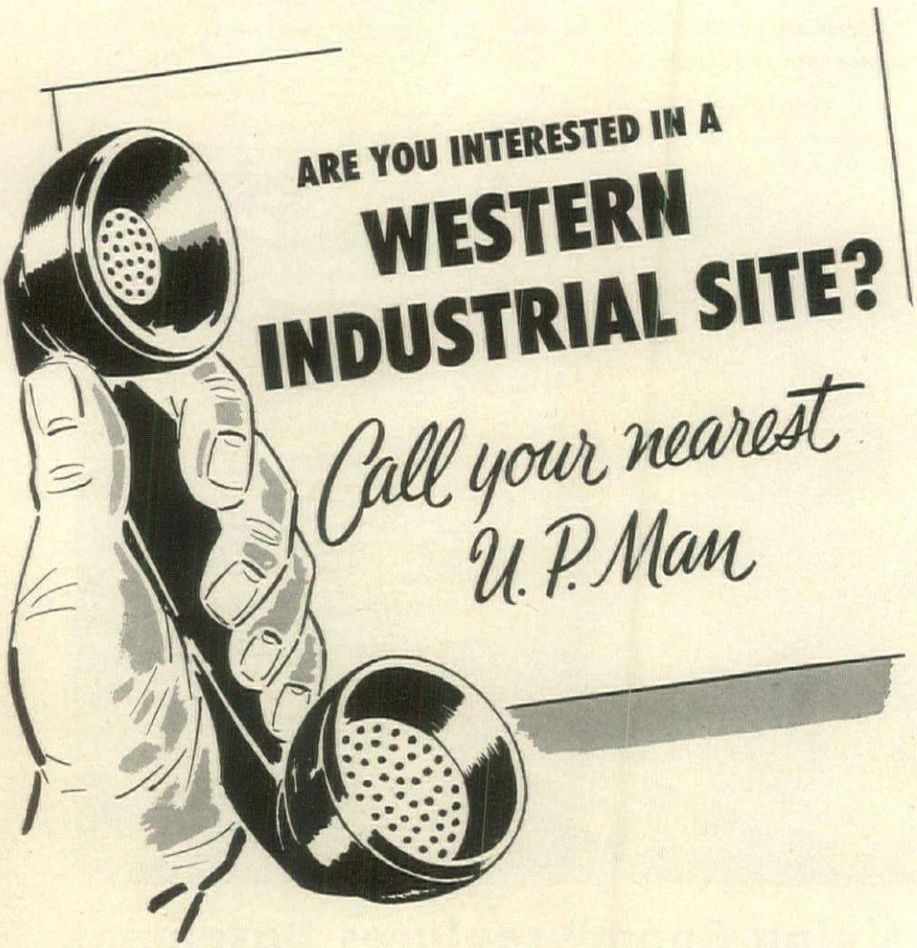
In the past, the economical construction of a dry, airy and cheerful basement was often a problem. With the increasing use of VIBRAPAC concrete block, this problem has ceased to exist. Produced by automatic machines, VIBRAPAC block is dense and uniformly textured. It is naturally water resistant and effectively sound proofed. Available in a variety of colors, sizes, and finishes, as well as in split-block innovations, VIBRAPAC block is easily adaptable to any type of architectural design not only for basement construction but for the entire home, as well as commercial and industrial structures of all kinds.



Vibrapac block constructed home. Note unusual effects created by using 4" and 8" high block.

The home built entirely of VIBRAPAC block has long been recognized as one of the best and most attractive examples of good construction practice. And where cost is a major factor, the use of such block is especially desirable. This material can be handled and laid with ease, speed and accuracy, thereby providing marked savings in time and labor. The story of VIBRAPAC block is an interesting and profitable one for builder and home owner alike. Complete literature on request. Write BESSER COMPANY, Box 179, Alpena, Michigan, U.S.A.

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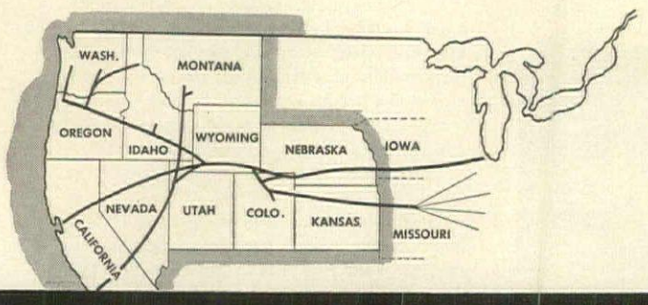


The Union Pacific serves a number of western states as pictured on the map. This vast territory contains an abundance of natural resources in addition to being a healthful, progressive region in which to work and live. As you know, it offers boundless opportunities for outdoor recreation.

If you're thinking about an assembly plant, warehouse, distribution center, or whatever it might be, in a western locality—then we offer this suggestion—

Contact your nearest U.P. representative. Tell him what you have in mind regarding an industrial site to meet your specific requirements. Then he can get in immediate touch with U. P. headquarters in Omaha . . . obtain for you the information you want about available sites.

Or—if more convenient—write, phone or wire the Industrial Properties Department, Room 365, Union Pacific Railroad, Omaha 2, Nebraska.



Map at left shows states served by Union Pacific Railroad

UNION PACIFIC RAILROAD

LETTERS

Continued from p. 82

seeing a church of such soft but powerful fluidity, combined with overwhelming mass and seemingly random placing of forms and openings, but upon closer study, combined with an effort to picture the building in its impressive setting, I begin to feel an impact that should be an integral part of the church's use of architecture. Here the hand of God touches his creation with an impact that properly combines awe and intimacy.

Crobusier, submitting himself to the discipline that must be part of the equipment of every great artist, has gone into the depths of religious experience as offered by the Roman Catholic Church, as she strives to keep alive the spirit of pilgrimage in a world whose travelers have given themselves too much to "sightseeing." The Chapel of Notre-Dame-du-Haut will require more than this of all those who expose themselves to its power. I predict that the Archbishop of Besancon will consecrate it upon schedule.

THE REVEREND CANON DARBY WOOD BETTS
Episcipal Diocese of Rhode Island
Providence, R.I.

ST. JOHN THE DIVINE

Forum:

Wayland W. Bowser, in his letter in the August FORUM, seems to be under the impression that churches and cathedrals should be run up overnight like shopping centers and office buildings. "The fact that the richest, most powerful nation of the Christian world can find neither spirit nor means to complete one great cathedral," he says, is evidence of "the greed with which we dissipate the county which surrounds us."

The fact that St. John the Divine has been 65 years abuilding is neither unusual for church construction nor is it evidence of greed and dissipation. Churches, like colleges and other public institutions, have always been built piecemeal, as the money came to hand. Reims took 88 years, Notre-Dame 75, and Beauvais never was finished. But Mr. Bowser might take a look at some of the cathedrals we *have* finished, despite our lack of spirit and means: notably Latrobe's Baltimore Cathedral, begun in 1806 and not finally completed until 1863—a period of 57 years; James Renwick's St. Patrick's Cathedral in New York City (1850-79); Betram Goodhue's Cathedral of La Santissima Trinidad in Havana; and several others.

Cathedrals are the result of religious fervor not unmixed with civic pride. In the Middle Ages the great cathedral or abbey church was often the sole monumental element in the town; nowadays such buildings are dwarfed by skyscrapers. The cathedral is no longer the only embodiment of municipal aspiration, which is expressed far more honestly in commercial structures. This does not mean that we are

continued on p. 94

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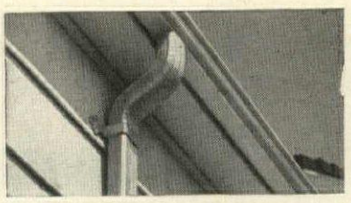
blends with surroundings

The soft, subdued finish of Armco Stainless Steel for roof drainage harmonizes well with any other building material or color scheme.



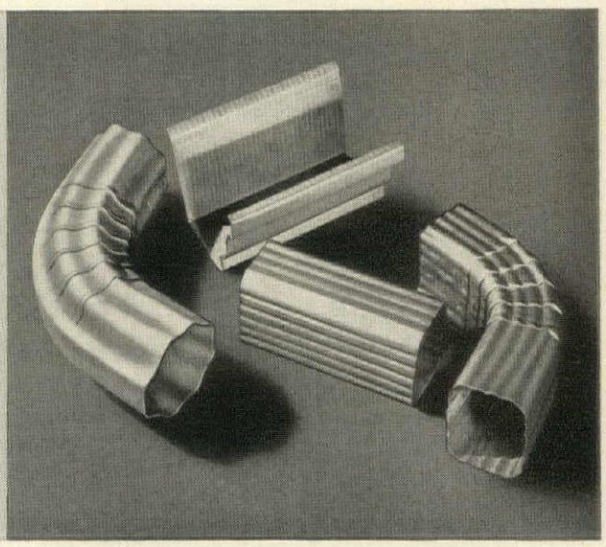
no patina to stain

There is neither rust nor patina to wash off on painted woodwork or masonry in completely stainless steel roof drainage systems. This means fewer repainting and cleaning jobs, much lower upkeep costs.



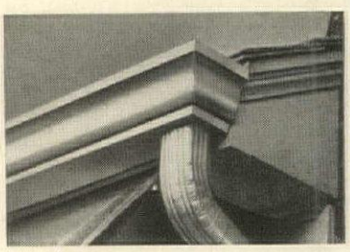
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When you specify Armco 17-7 Stainless Steel for roof drainage you get the strongest metal used for this purpose. Gutters withstand heavy loads of ice and snow without sagging—resist buckling and cracking due to extreme temperature changes.



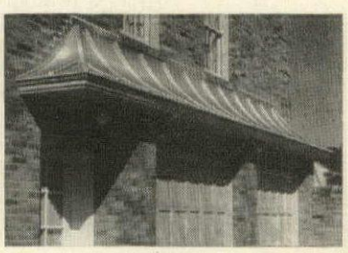
easy to install

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flashing and accessories too

In a stainless steel roof drainage system, flashing should be made of stainless steel strip, and to prevent stains from corrosion of other metal, all accessories should be of stainless steel too. These include hangers, hooks, nails, rivets, screws, cleats and bolts.



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Luxurious new hotel shows how you can

Satisfy any client's most exacting indoor weather needs

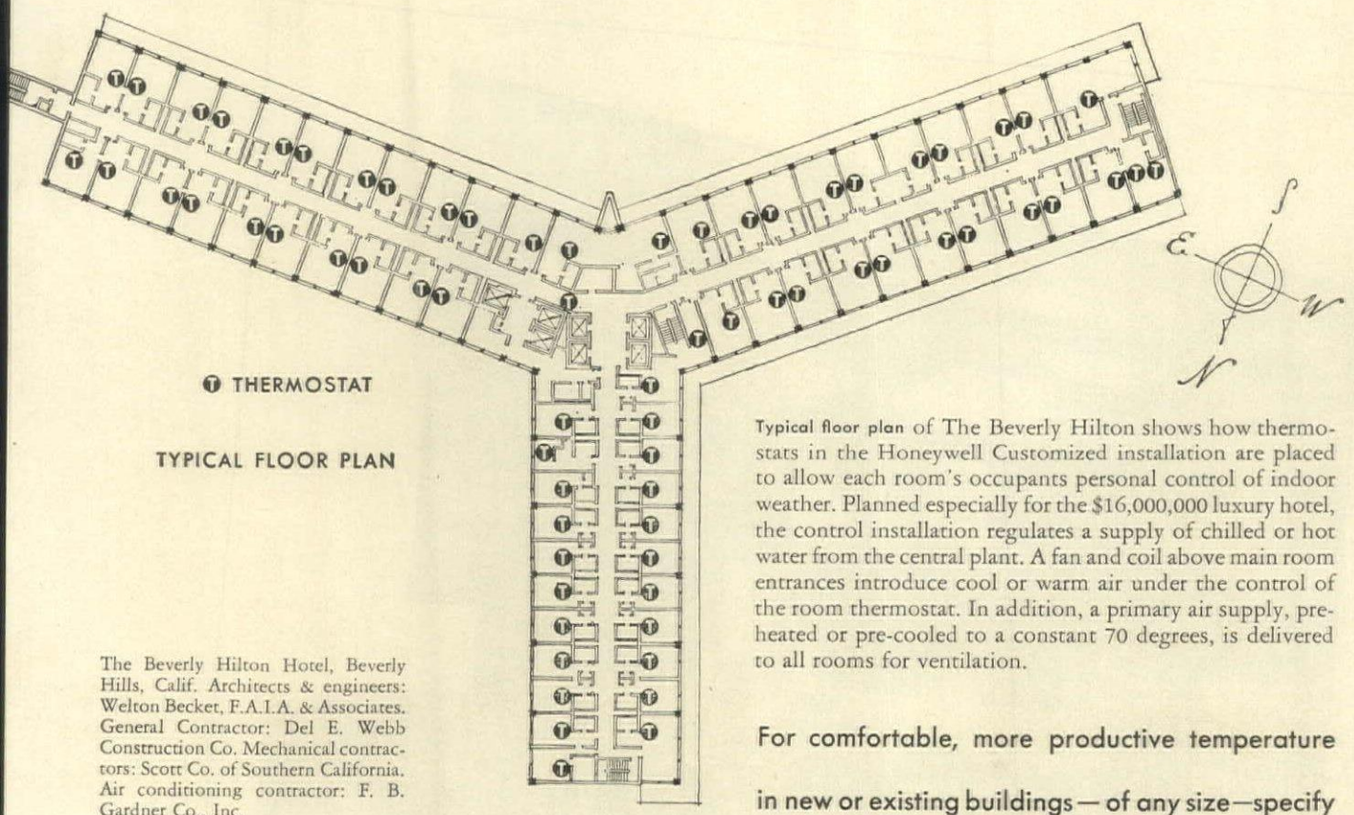
Honeywell Customized Temperature Control gives Beverly Hilton guests the climate of their choice in each of 450 rooms

FOR THE MOST modern kind of hotel, newest in Conrad Hilton's world-wide group, The Beverly Hilton's planners chose the most advanced type of temperature control installation: Honeywell Customized.

"Customized" is the key word here. It means that a Honeywell Customized Temperature Control installation is designed to fit the needs of the building and its occupants—in heating and cooling, in ventilating and humidity control.

In The Beverly Hilton, a completely air-conditioned luxury hotel, guests are assured comfort suited to their individual requirements; each simply dials his own choice of indoor weather.

Only Honeywell can provide true "customized" control. Because only Honeywell manufactures all three types of controls—pneumatic, electric and electronic.



TYPICAL FLOOR PLAN

The Beverly Hilton Hotel, Beverly Hills, Calif. Architects & engineers: Welton Becket, F.A.I.A. & Associates. General Contractor: Del E. Webb Construction Co. Mechanical contractors: Scott Co. of Southern California. Air conditioning contractor: F. B. Gardner Co., Inc.

Typical floor plan of The Beverly Hilton shows how thermostats in the Honeywell Customized installation are placed to allow each room's occupants personal control of indoor weather. Planned especially for the $16,000,000 luxury hotel, the control installation regulates a supply of chilled or hot water from the central plant. A fan and coil above main room entrances introduce cool or warm air under the control of the room thermostat. In addition, a primary air supply, preheated or pre-cooled to a constant 70 degrees, is delivered to all rooms for ventilation.

For comfortable, more productive temperature in new or existing buildings — of any size — specify Honeywell Customized Temperature Control

Whatever the building, Honeywell Customized Temperature Control can help solve your clients' problems of heating, ventilating, air conditioning and industrial control. At the same time you can give them more comfort, more efficiency, more economy.

For full details on Honeywell Customized Temperature Control, and economical Maintenance Plan, call your local Honeywell office. Or write Honeywell, Dept. MB-12-157, Minneapolis 8, Minnesota.



Luxurious appointments are exemplified by this sitting room of a typical Beverly Hilton suite. Modern *comfort* is provided by the Honeywell Customized Temperature Control installation, which includes a conveniently located thermostat in every room. Once the guest dials the temperature he likes, the thermostat keeps the comfort level constant—despite heat gained or lost through floor-to-ceiling windows.

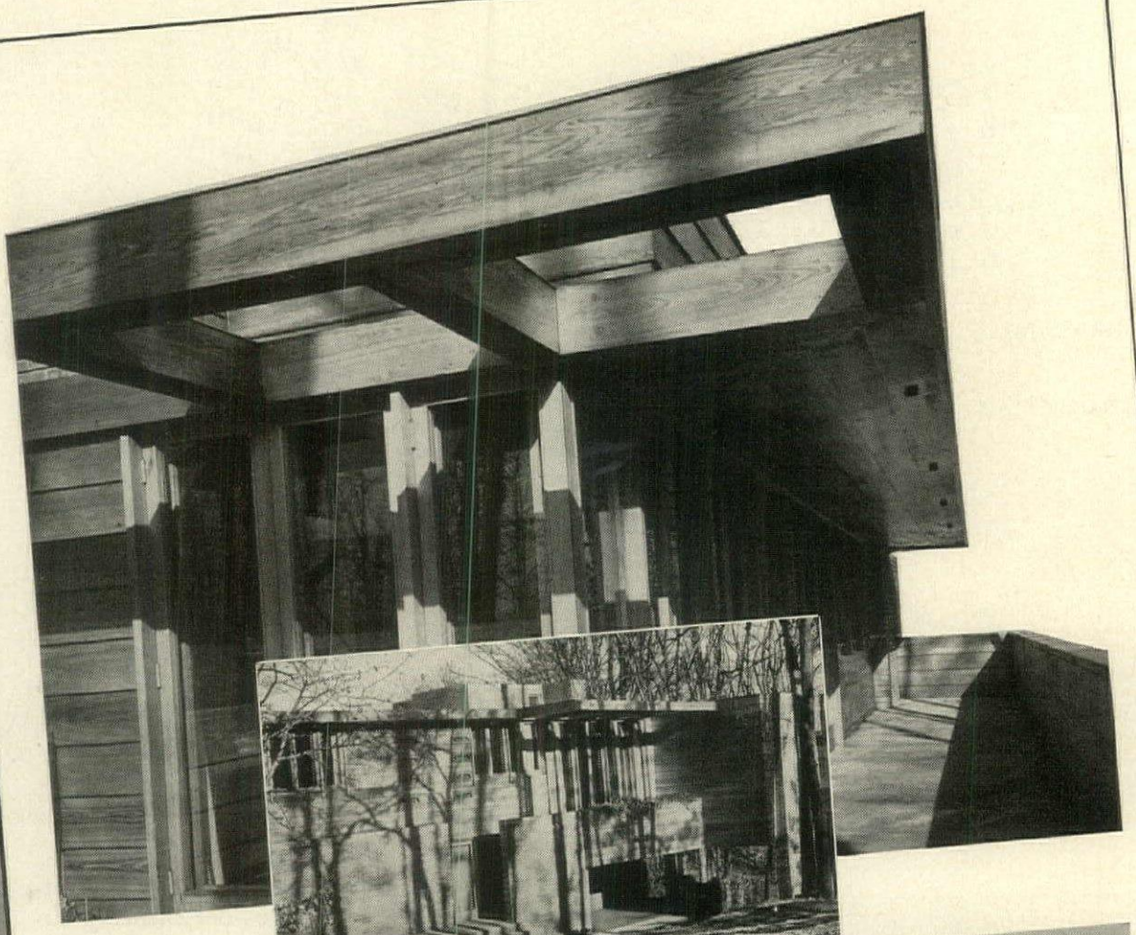
Conrad N. Hilton, president, Hilton Hotels Corporation, says: "Among the features that make our new hotel completely modern is a Honeywell Customized Temperature Control installation that allows each guest to select his own comfort preference. This is in keeping with the Hilton tradition of providing our guests with every comfort facility."



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The ARNOLD Residence
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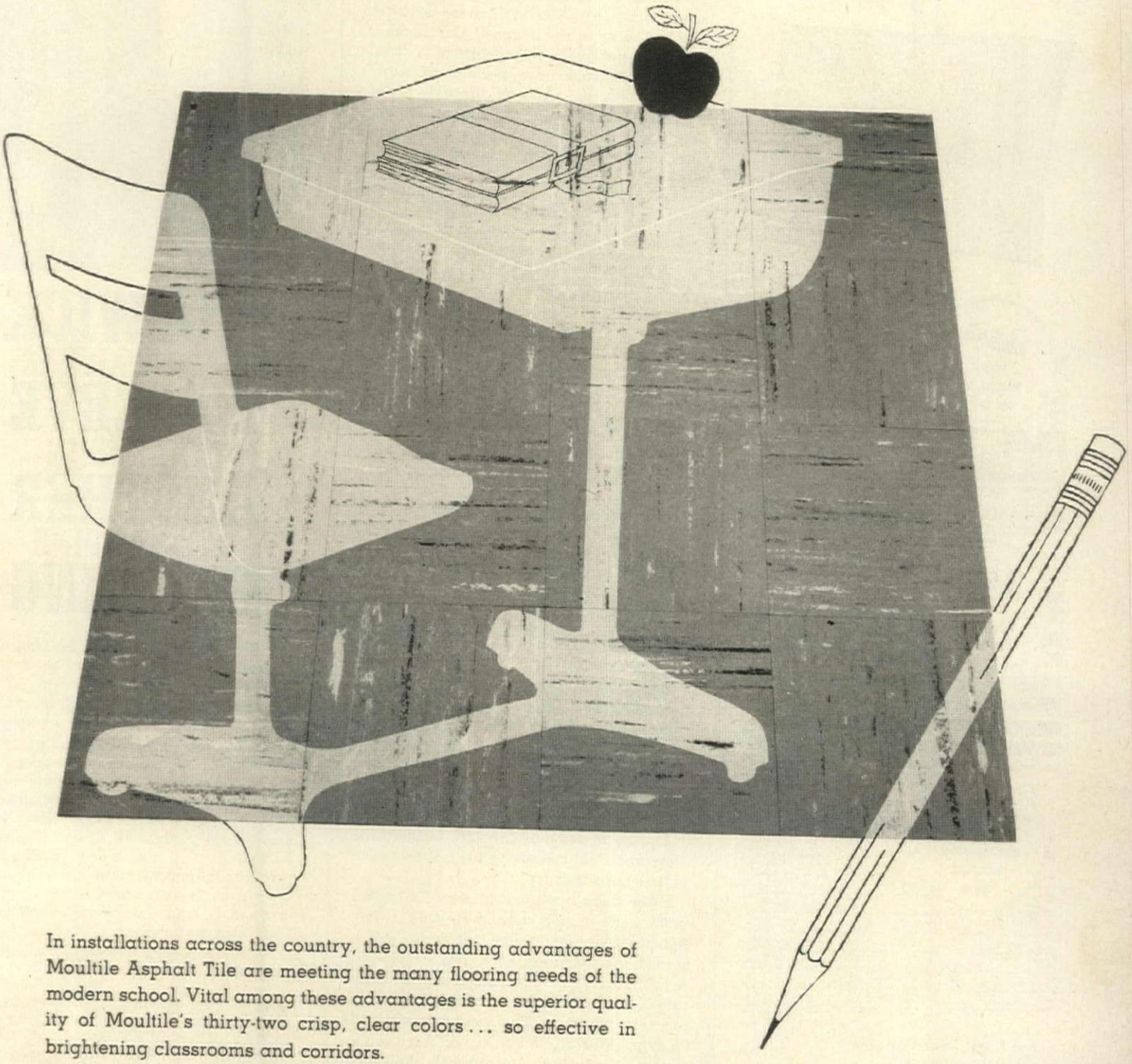
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LETTERS

Continued from p. 88

spiritually bankrupt, only that the money and effort which once made the cathedral great, now makes the office building great. The purpose is still municipal pride.

If St. John the Divine is never finished, it will have something in common with many other cathedrals; if some architect makes it over in the image of the Bauhaus, that is squarely in the tradition of buildings constructed over periods of architectural change. And if French Gothic spires and a Byzantine crossing are its fate, it will be a monumental summary of American eclecticism, which also has a certain fitness.

GEORGE L. HERSEY
Lewisburg, Pa.

• Proposals for the completion of St. John The Divine appear elsewhere in this issue.—ED.

TEXAS PROTEST

Forum:

I protest the report of the resignation of Harwell Harris as director of our School of Architecture (AF, Aug. '55). It is dismaying to note that a professional periodical would quote the remarks of one member of its profession reflecting upon the competence and professional standing of other members of the profession.

Not only has your publication of Mr. Harris' quite unprofessional remarks had the effect of discrediting the School of Architecture of The University of Texas, but also the professional reputations of the members of its staff.

LOGAN WILSON, *president*
University of Texas
Austin, Tex.

• Harris' opinions, usually worth heeding, are always worth reporting. Perhaps Texas' School of Architecture will ultimately benefit from Harris' bluntly expressed appraisal.—ED.

CLEVELAND'S ARCHITECTS

Forum:

My colleagues and I are very surprised to find no mention of the architects on the Cleveland Public Housing project shown in your August issue (p. 139).

Ernie Bohn is a great planner, but there were some minor details in this Cedar Apartments Extension project which needed the attention of a few architects. A group of us in Cleveland formed a firm called Project Architects and Engineers for this purpose. The group consists of Damon, Worley, Samuels & Associates, George B. Mayer, Mellenbrook, Foley & Scott, Weinberg & Teare, Walker & Weeks, and my own firm, Dalton-Dalton Associates.

GEORGE F. DALTON III
Project Architects and Engineers
Cleveland, Ohio

KUDOS

Forum:

FORUM measures up, in every respect, to the quality and traditional reportorial standards established by TIME enterprises.

GEORGE T. HOISINGTON, *engineer*
Wichita

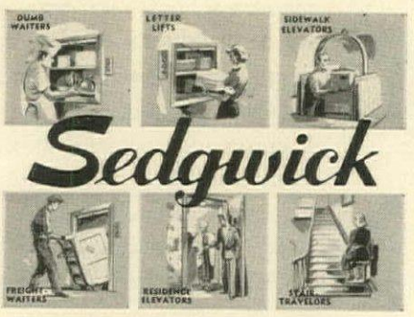


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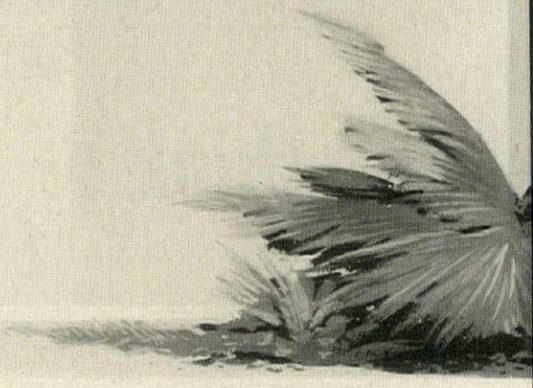
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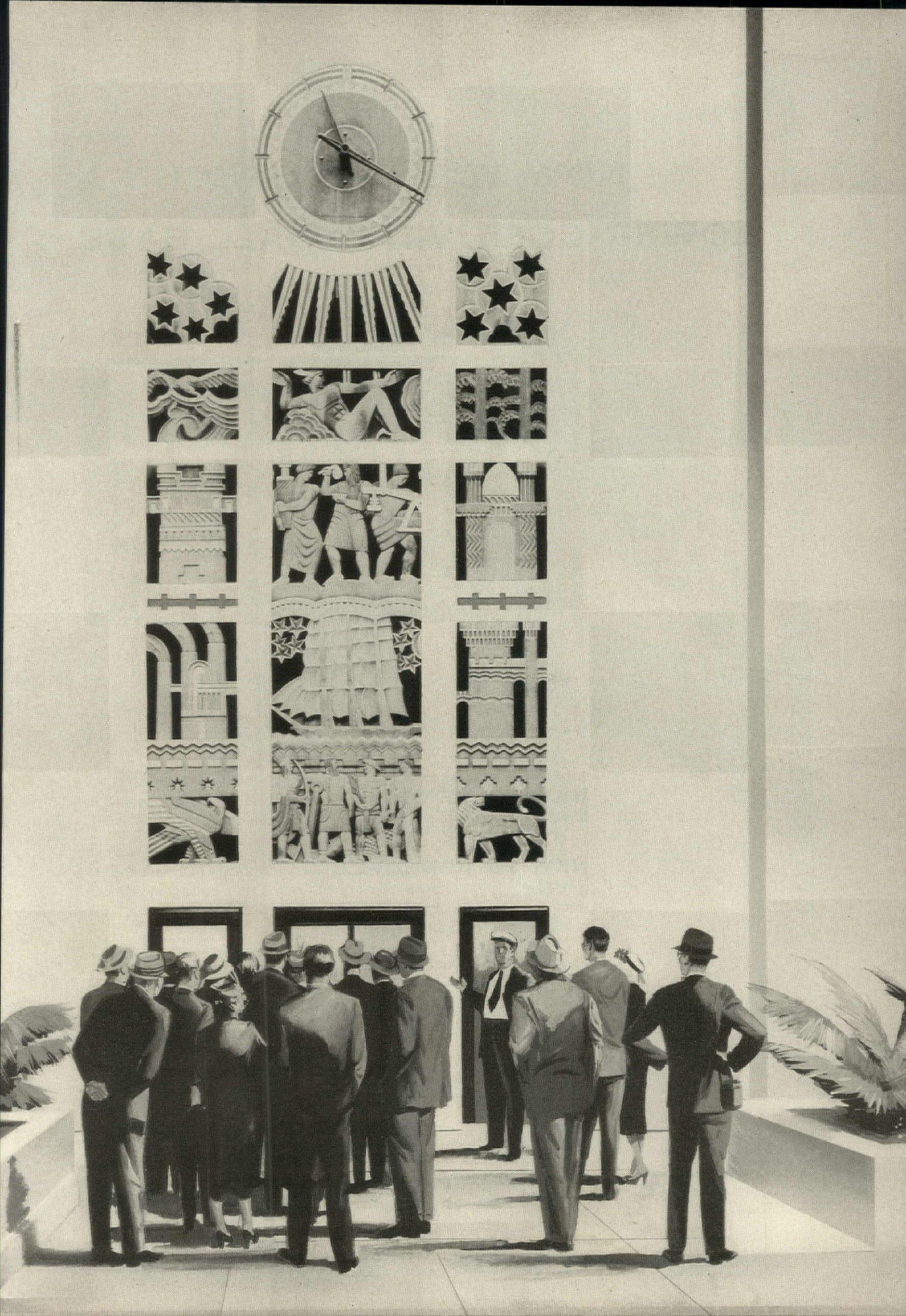
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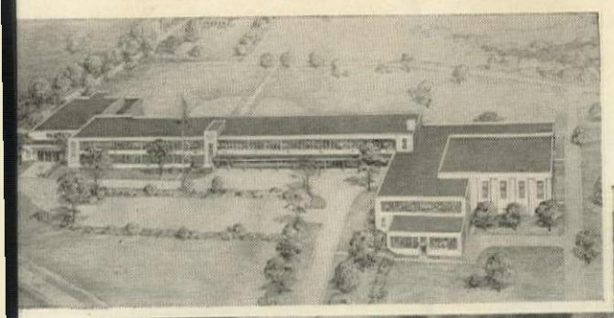
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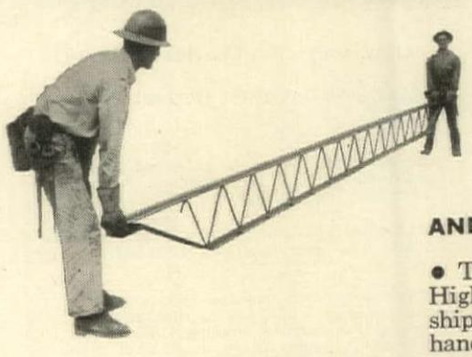
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ARCHITECTURAL FORUM is published monthly by TIME Inc., Time & Life building, 9 Rockefeller Plaza, New York 20, N.Y.

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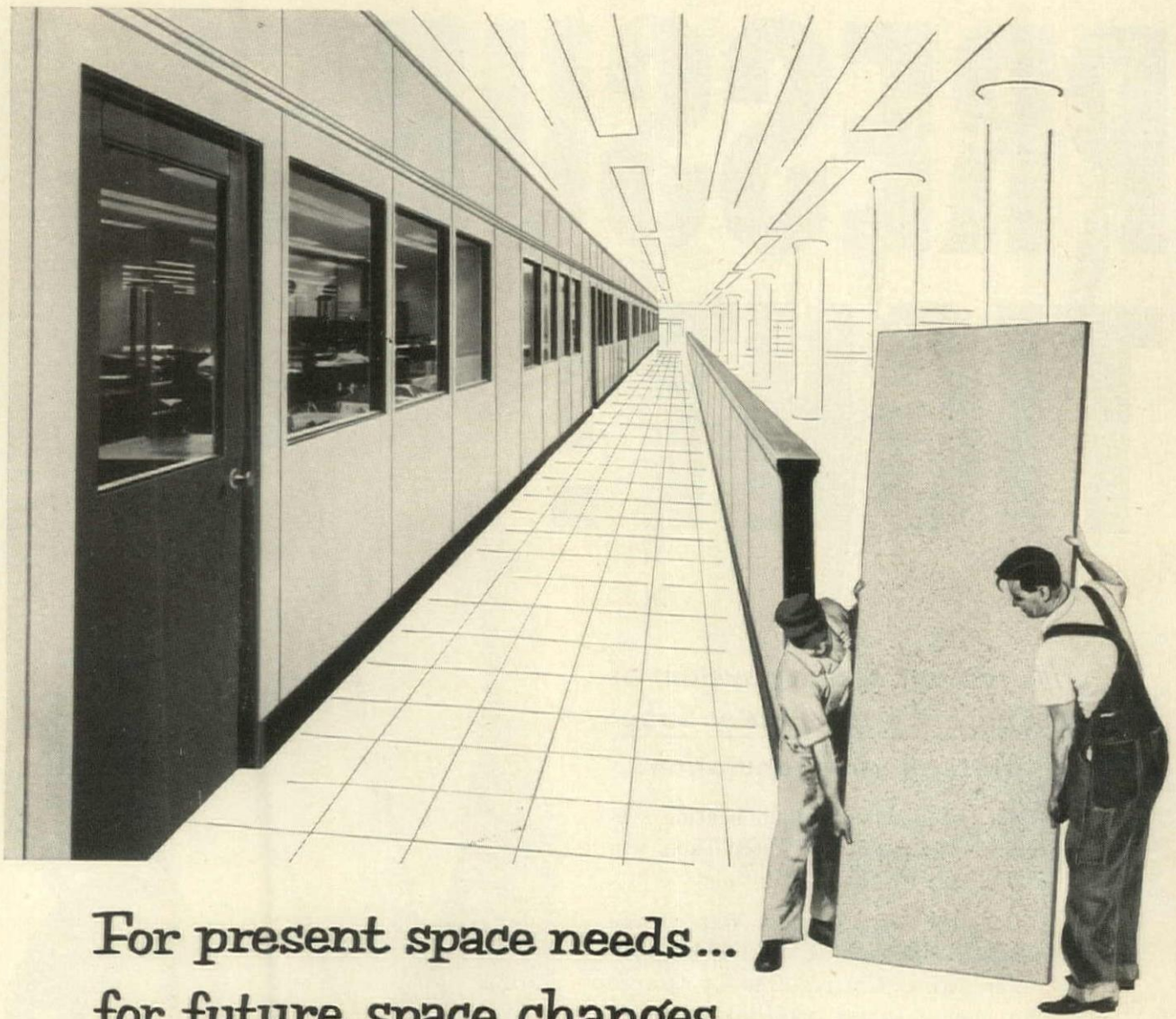
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EDITORIAL CORRESPONDENCE should be addressed to ARCHITECTURAL FORUM, 9 Rockefeller Plaza, New York 20, N.Y. FORUM will not be responsible for unsolicited manuscripts or illustrations submitted, and it will not return such material unless accompanied by postage.

ADVERTISING CORRESPONDENCE should be addressed to the advertising director, ARCHITECTURAL FORUM, 9 Rockefeller Plaza, New York 20, N.Y.

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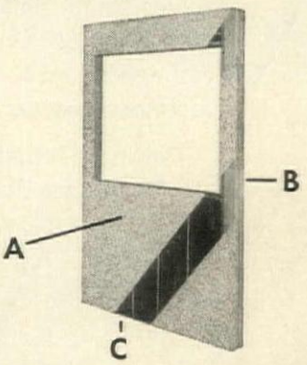
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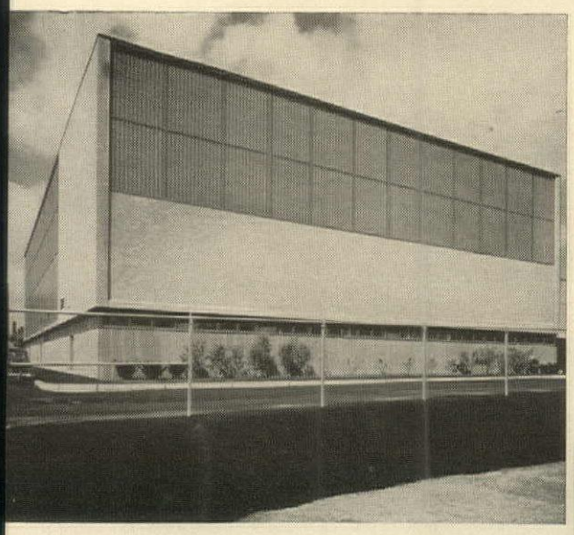
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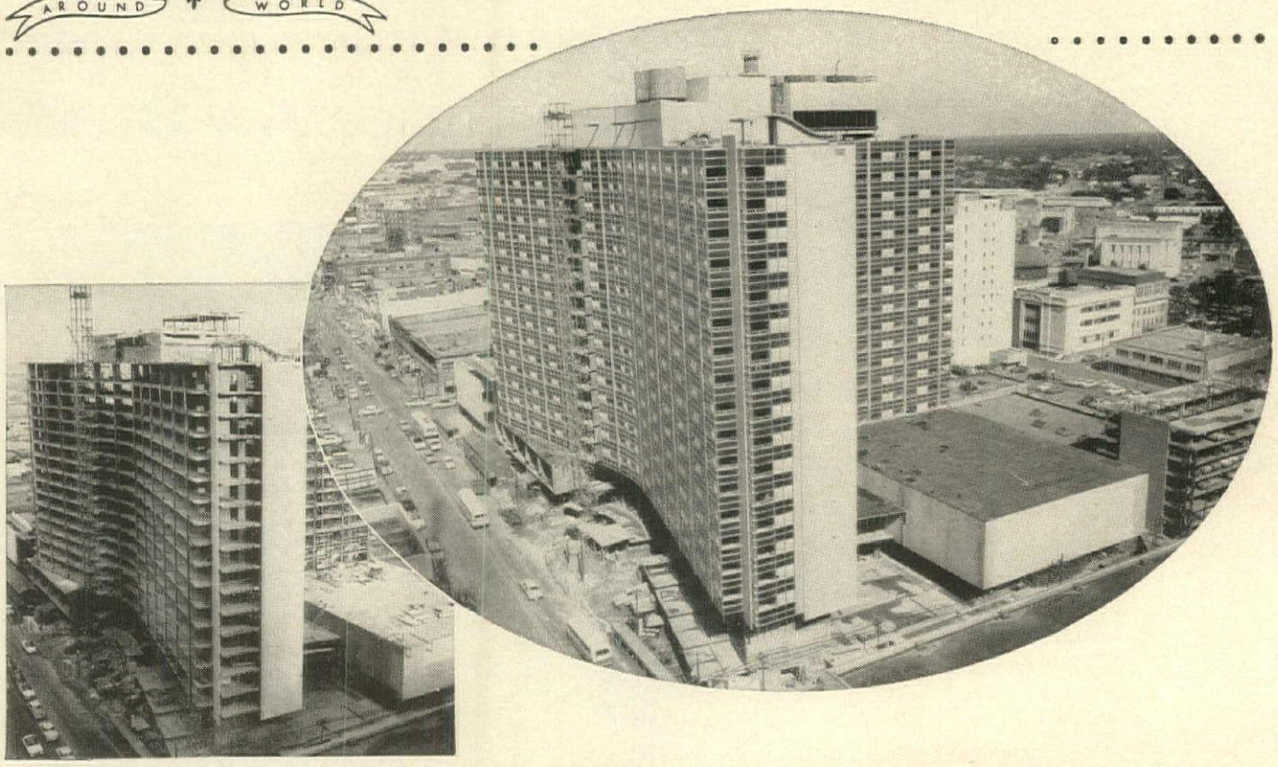
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AROUND THE WORLD



Ingenious Design Cuts Construction Costs on Dallas' 1001-Room Statler-Hilton

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Of flat-plate construction, the building is T-shaped, with three wings, each about 156 ft. long and 48 ft. wide, radiating from a central core. There are only two longitudinal rows of columns in each wing, with floors cantilevered 10 ft. beyond column centerlines to support the sandwich-panel walls. Floor slabs are 8 in. thick; no drop panels or column capitals used; only painting was required.



In this latest example of the advantages of reinforced-concrete frame construction, a total of 48,305 bbls. of Lone Star Cement was used. Equally proud is Lone Star of the part its products have played in other famous Hilton Hotels—the Waldorf-Astoria, the Shamrock-Hilton, Houston, and the new Statler-Hilton, Hartford, Conn.

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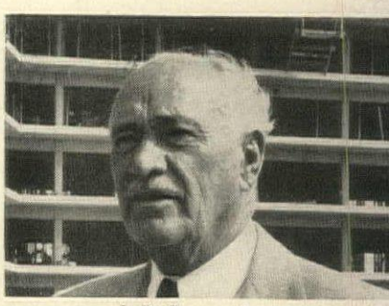
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J. R. Eyerman—Life

Men behind the blueprints in this month's FORUM



OWNER: Conrad Hilton, with close to $90 million worth of construction underway, is one of building's biggest customers. When his Istanbul hotel (p. 120) opened last summer, he still had six hotels abuilding —in Mexico City, Acapulco, Havana, Cairo, Montreal and Dallas. Two others are planned: in Rome and Berlin. All told, Hilton has 36 hotels and two office buildings. He acquired 12 of them from Statler last year in what he calls "the biggest real estate deal ever made—seven times bigger than the Louisiana Purchase." Although he concerns himself mainly with the bigger aspects of running his $200 million annual business, he takes a very active interest in design. To wit, the new Beverly Hilton has a long prototype bedroom. Says he: "Although I'm not an architect, I designed it . . . to be the ideal hotel room."



ARCHITECT: Charles Warren Callister, although not licensed in California, has created some of the state's most beautiful works of architecture. The First Church of Christ Scientist in Belvedere (p. 139) is a case in point. Modestly, Callister attributes the quality of this small building to the site, the religion (he is a Christian Scientist), the humble use of simple materials and his "marvelous clients"—a building committee and two subcommittees (furnishings and garden), many of whose members have had professional experience in design, building, landscaping and finance. Says Callister: "The part that I played as the architect was one of interpretation."

THEOLOGIAN: Professor Paul J. Tillich, newly moved to Harvard Divinity School from Union Theological Seminary, is generally considered the foremost living Protestant theologian and has been compared with the greats of other times. Born in Germany in 1886, he is the author of several lucid books ranging from textbooks to collections of essays like *The Courage to Be*, a counterstatement to philosophic "existentialism." He is also a man whose interest in art extends from the earliest to the latest. Consequently FORUM deferred its long-planned round table on Protestant church architecture (p. 130) until Dr. Tillich could lead it.



Edward Clark—Life

ARCHITECTURE IN AMERICA—PART IV

Another in a series of articles exploring where architecture stands in America and what is happening to change its future

THE CORPORATE CLIENT

In an age of group thinking, the big organization has to learn how to make its buildings not only serviceable but eloquent, while the architect has to learn a new technique of effective working

American architecture is still getting acquainted with its newest and most valuable client—the large-scale organization. The largest building resources, the most significant building programs, the buildings or building groups whose architectural needs are potentially the greatest, belong not to individuals but to big groups working together. The biggest are vast government agencies such as the Atomic Energy Commission, vast business organizations such as Bell Telephone Co., or vast institutions for health or learning such as Bellevue Medical Center or Stanford University. Behind these is a large group of organizations smaller in size but similar in structure and attitude.

This much is well known; but less attention has been paid to the fact that these clients, with brilliant exceptions, have accepted surprisingly low architectural standards in terms other than the utility of functionalism, economy, efficiency and speedy building, and sometimes not even in those. For example, passengers for new airplanes, which will carry them miraculously across the

Prepared by Frederick Gutheim with the aid of FORUM's editors



Sixteen people, the planning commission staff of Kansas City, study scale model of proposed office building project by Architects Kivett & Myers and Associate Angus McCallum.

whole continent in a day or less, must too often embark through municipal airports better conceived for the deportation of convicts; too many great stores and shopping centers are still put together like a madhouse; too many factories are still built by those who seem never to have heard of the human race.

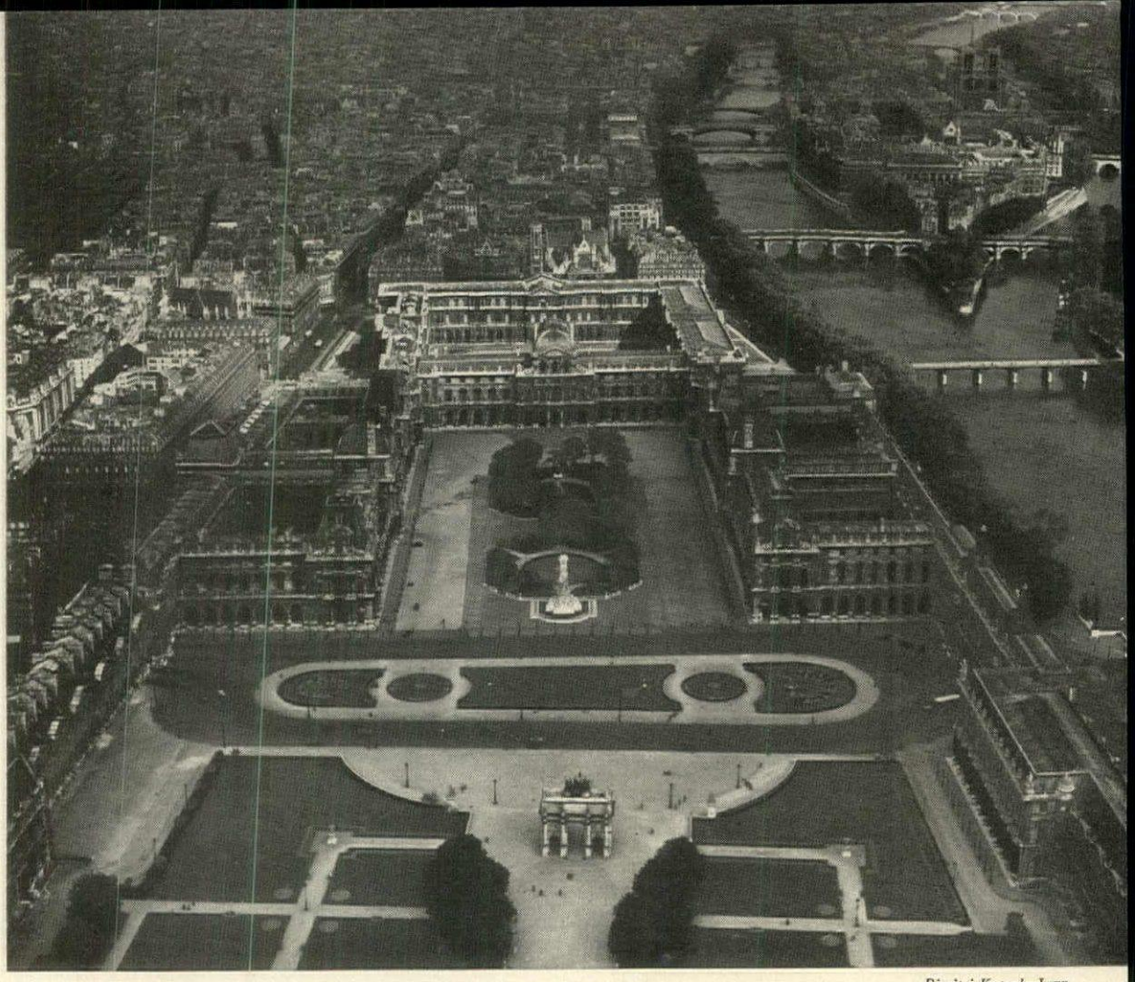
At a higher level we have large numbers of buildings, put together by immensely respectable institutions and replete in every useful facility, but architecturally illiterate. Throughout the modern civilized world, too many of the largest and most important buildings are at best mute, unable to speak for the high ideas and purposes that called them forth but were unable to give them *shape*. Where this happens the failure and the fault are different than they were in the days of individual folly-builders like Bavaria's famous Mad King Carl. The people who constitute our new big organizations are sensible men; where folly ensues it is most commonly because architecturally these sensible men have not yet collectively mastered a new group-action technique.

"The corporate client" is the name we can best give to the new large-scale organization in its purest type.

For purposes of clear analysis the present discussion will stress business organizations, and moreover will be confined to businesses that build not for speculation or investment but for their own use. For example, the typical problems of the corporate client involve an organization like Prudential Life not as it has financed some half billion dollars of building investment in one year but as it is building a series of striking headquarters buildings for itself, each of them deliberately built tall on spacious grounds to be seen from afar, in order not only to serve the work of Prudential's 14,000 employees but to give Prudential a public face.

The typical corporate problem in architecture involves Metropolitan Life not as the builder of Stuyvesant Town or Parkchester but as an institution that is building a more efficient home office and meanwhile preserving its famous tower on Madison Square in New York as an architectural trademark for itself. The role of insurance companies in placing annually close to $3 billion of the collective savings of the American people in building ventures—finding building outlets for $10 million every day—gives them a control over architecture that belongs in a different chapter. And so does the role of government bodies investing for the people as a whole.

The new "corporate" pattern of decision-making does however largely dominate the work of *ad hoc* building committees that still predominate in school, church, hos-



Dimitri Kessel—LIFE

pital and other institutional fields. These committees are generally led by the same business executives, often the very same people, who act in the purely business "corporate" field.

The key question is how corporate building decisions are made. Even in groups of less than top size, this is the age of group thinking and process decisions.

The corporate client reflects the new philosophies of organization that have revolutionized quantity production and have been so effective in promoting research and health. The modern executive is apt to think of himself in this way: "Any time I endeavor to make the decisions that my subordinate should make, I am killing his value to us by making him dependent on me." Managerial absolutism is waning. Trying to run an enterprise by authoritarian edicts is being succeeded by wide-spread discussion of problems and by group decisions.

The reluctance of modern corporate executives to step in and make building decisions is frequently hard for their architects to believe. The frustrated architect is likely to fume at this "abdication of executive responsibility." Yet it is becoming harder and harder to find a man in management's top levels who will act the way most architects still think he should act if the building job is to go well.

The decision-making process brings into architectural focus all the major activities of the corporations, not merely as they require space or facilities in the building but as they are affected by the building program as a whole. Architectural planning is the stage on which each enacts his role. In a manufacturing concern the vice president in charge of sales may be (and frequently is) at the throat of the vice president in charge of production. They are competing for ultimate control of the company, perhaps; but they are fighting also for their share of the building budget and their share of space.

Beyond the building itself

To the director of personnel the characteristics of the space assigned to him in a new building may be less important than the capacity of the building itself to attract good applicants for employment and reduce costly turnover among critical classes of employees. This was a major objective in the design of Lever House. Company specialists in office layout or space utilization have their own standards and requirements. Specialists in advertising or publicity may keenly appreciate that the design of a building or the fame of its architect can exceed in effectiveness any other device for securing favorable public attention for the company or its product. The Johnson Wax Co. runs regular guided tours and has even tried to assign a dollar value in millions to its Frank Lloyd Wright architecture as a company asset.

Within this general technique of conference decisions the corporate client must find specific technique for organizing his building problems. Where building is incidental and sporadic, the traditional building committee has survived. But where this works well it has been



Lionel Freedman

Two declarations by important architectural clients ages apart: In the Paris Louvre, built as a palace, Louis XIV declared the political empire of a divine king, while in its Technical Center near Detroit General Motors Corp. architecturally declares its industrial empire of research and mass production. Architects, respectively: Pierre Lescot and Eero Saarinen & Associates with Smith, Hinchman & Grylls.

strongly reinforced by company officials of exceptional ability, perhaps appointed by the treasurer, to give the job the time and attention it demands.

At the opposite extreme are corporations which find themselves building very often or all the time. They have a construction division which may be called an engineering department, a service department, a building department, or some other name. Only rarely does the corporation erect and operate buildings itself, on the model of Chicago's famed Clearing Industrial District, essentially a real-estate management operation. Their able Manager Douglas Wells with his realty staff, and Architect John Cromelin under him, not only directs the planning but the building and operation by his own firm. More to the point is J. C. Penney's Construction Div. under Construction Manager Joseph H. Bliss. Bliss is not himself building the 110 Penney stores now under construction (or the 105 in the planning stage). Penney leases its stores from owners who put up the buildings for him; but Penney's staff of 70 architects and engineers draws the plans and writes the specifications to Penney's experienced standards, making modifications only where the prospective owner is persuasive about them.

A wide variety of other patterns has developed. In a company like US Steel the engineering department is the direct responsibility of Executive Vice President M. W. Reed (one of five in the corporation) and tied in closely with an Executive Policy Committee on such matters as the timing and scale of construction program. In growth industries like the Aluminum Co. of America (its size increased twelve-fold in the last 15 years) a large construction organization under architecturally trained Vice President "Fritz" Close concentrates on the design of plants, but yields the actual work to outside firms when a major headquarters building is to be constructed. In General Motors, the Argonaut Div. under Fred Tykle, a relatively autonomous division but not a subsidiary, handles real estate and building with its own forces. Argonaut is tied back into the main stream of GM activity through a manufacturing policy committee and so related to the powerful vice president in charge of manufacturing. The advantage of a setup like GM's was dramatically evident after the Livonia fire, when Argonaut was able to buy and remodel the Kaiser plant at Willow Run and restore production of GM's automatic transmissions on a crash schedule.

Most companies know the limitations of their own engineering and construction staffs, and do not hestitate to go outside for skilled architectural help if they need a headquarters building, a research laboratory, an office building, or a hospital facility.

Fiscal officers play an important role in building decisions because of the heavy capital outlays. More subtly, treasurers or budget officers have to reconcile and keep in perspective the competing demands of various parts of the organization; frequently, too, architects find that such officers dominate the choices where competing types of materials or equipment are available or alternative policies are discussed. These officers see building materials salesmen, retain independent consulants, check the per-



Alfred Eisenstaedt—Life



Two factories: early industrialists proclaimed in their multistoried mills the importance of what they were doing, while in the design of today's sprawling industrial plant, the corporation, less personal, boasts of speed and efficiency. Left, a segment of industrial Lawrence, Mass.; right, the Alcoa plant in Davenport, Iowa, designed by its own staff.

formance of other similar buildings, or investigate what competitors may be doing.

Probably the most recent development is the advent of over-all planning staffs. Standard of New Jersey, General Motors, Koppers are typical firms with this approach. Because stress is laid on general programming, planning staffs tend to plug the worst gaps that exist in the thinking of most engineering and construction divisions, and give sharper definition to the purpose that a new building program plays and consequently to its architectural character.

Unhappily a close look at typical buildings being created by large organizations does not show an improvement in the result comparable to the elaborate development of planning method. The buildings reflect the owner's anxieties about costs, and uncertainties about policy, rather than bold positive programs to further major objectives. If the executive in charge of building, whoever he may be, is to be judged exclusively by whether or not he stays within cost estimates, or adheres to rigid building schedules, or delivers a building identical in every detail with the plan approved by the building committee, then the working quality and the architectural expression of his building will both be overly timid. Changes meant to break through the "paper curtain" that separates the building's conception from its execution will be few and far between. Risks may have been minimized but value jettisoned in the process.

What architecture at its best offers the corporate client goes beyond functional performance and bears on his problems of unity, coherence, good relationships.

The large-scale organization is increasingly characteristic of the modern world—in America and everywhere. This organizational world is outgrowing its earlier crudity in a dynamic evolution toward a new humanism disclosed by students of the sociology of large-scale organizations, students of the behavior of labor force and management alike.

Beyond routine functionalism, beyond the working satisfactions we have just described, what does a large organization need that its architecture now typically lacks?

The simplest answer is that it must, in the words of the advertising fraternity, "build character." The buildings must give this individual organization its individual face for all to see. The buildings must advance the objectives of the organization as a whole, distinguish it from other similar or competing organizations, help its efforts toward unity and organizational integration, make its members feel they belong.

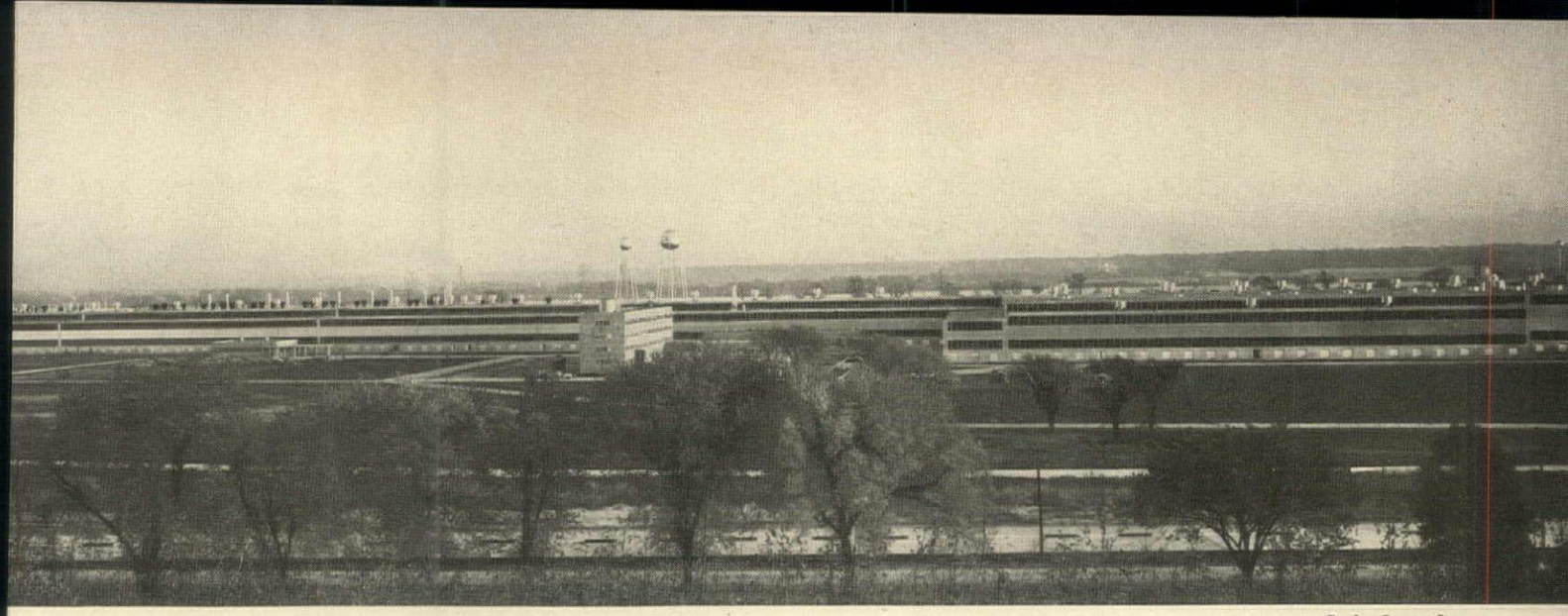
Architecture's corporate message

The buildings of the corporate client need not be silent. The important story they may tell is that of modern management and the particular philosophy that it regards as a way of life. It is in this sense that some few great organizational masters operate—it is because they wish to use architecture expressively and not because they have the mere power to build massively that they have made themselves the heirs of bishops and princes who built cathedrals and palaces.

What for example would be the *architectural equivalent* for opinions like these:

Robert Wood Johnson, chairman of the board of Johnson & Johnson, champions the view that "all business, large or small, is a part of its community, its state, and its nation." He has repeatedly asserted that "business must make its contribution to the convenience, beauty and healthfulness of the community in which it operates," and has backed this up with a series of handsome factories set in parklike surroundings.

Charles E. Wilson, when he was president of General Motors, expressed the aim this way: "It is increasingly clear that our large industrial corporations are not merely economic institutions but that they have social responsibilities and problems as well—that business decisions and policies must be adopted not only in the light of short-term and long-term factors but also with recog-



Gordon Coster—Life

nition of pertinent social values and possible social reactions."

Eugene Holman, president of Standard Oil of New Jersey, contends: "Ways must be found to give the individual worker at every rank a sense of accomplishment, a feeling of personal worth, a realization of the true importance of his efforts to the broad scheme. The individual employee wants not only fair pay and reasonable security but just dealings, respect, and a feeling of accomplishment."

Among these values which go over into the intangible, the ones having to do with employee "welfare" are probably furthest along. Their real aim is to get the employee to identify himself proudly with the organization to which he belongs and serve it in more than a grudging manner. And *adjunct* facilities for employees have developed faster than those subtler elements of working environment that architecture "builds in." Adjuncts like nicer employee cafeterias, adequate health facilities, and an occasional elegant employees' recreation building such as that of Electrolux Co. at Greenwich, Conn., by Architects Raymond & Rado, have usually been developed ahead of lighting of work tasks, or air conditioning for all employees, or acoustical deadening of high noise areas in factories. These direct improvements in the over-all character of the work space itself come later, human nature being what it is.

As for those subtler and still more basic architectural qualities that make for happiness among occupants—prime among them the sense of *scale* that gives intrinsic pleasure through a good relationship between the size of a room and its occupants—these qualities are fully seized only where the occupants of the building are to be favored people: customers in stores or theatres, children in school, the higher executives in offices, top research staff in laboratories. In factory work, although there has been intensive engineering study of working conditions immediately surrounding a "task," such as the light shining directly on a workbench or machine, and the colors that aid safety, a top building executive of a large manufacturing firm confessed at a FORUM round table that there has been no research on such overall architectural questions as the best size, phychologically, for various kinds of workrooms. And at a conference of high-ranking building people in a Midwestern American city, when it was pointed out how the occupants of a whole series of office buildings and lofts liked to pour out into an adjacent city park in warm weather to loaf and sun themselves during lunchtime, no inference was drawn that such park space might be a good thing to secure deliberately in buying office building sites, or that it might pay off in a better employee spirit.

The subtler qualities that give an institution unity of impact are harder yet to recognize in design. Though it is intolerable for a business to treat its customers on one set of assumptions and its stockholders on another, its labor force this way and its suppliers that way, yet unity of expression is still rarely found in the building, packaging, product design, advertising, printing of the same firm. It is an Italian organization rather than an American one that comes to mind: the Olivetti Co., producing business machines, has been most conspicuous in showing that what it builds and what its people use in their daily work are as important as what it makes. It has viewed its architecture as an expression of its attitude toward its customers, its employees, its suppliers, the communities in which it works. Olivetti's architecture expresses itself easily and equally in the design of an employee's bicycle shed, a retail outlet, an advertising kiosk, a factory, or a housing project.

An industrial Versailles

The very fact that architecture is a language, and that it can so eloquently speak the corporate message, is still unknown to most corporate officers, who think of architecture at best as a sort of decoration. They are only vaguely aware that the architecture of the General Motors Technical Center, for example, is something more than a beautiful lake and park set with

brilliantly colored buildings. It is, of course, nothing less than the Industrial Versailles—the nerve center, the capitol of an empire whose corporate directors and managers believe in what GM stands for and what it does even more firmly than Louis XIV ever believed he was divine, and have declared themselves (as he did) in the way they built. The fact that a research center rather than an office building has been singled out by them for top honors is in itself the thing we are talking about: a building program with symbolic significance.

The fact that so many corporate heads know so little about architecture as a language is disheartening and surprising in its results, but understandable. Nobody ever learns a thing in American schools about architecture until he is full grown. Some little music is taught in the earliest grades along with some little art; plays and poetry are known to exist by students of high school English. But architecture does not usually come along until some stray course in college on "art appreciation" or "art history."

The architecture of banks is especially pertinent, for bankers have always had a role to play in our society like wise provident fathers, and their architecture should say so too. Traditionally banks used to mark themselves with columns and pediments of high classical design with a dignity greater, if possible, than that of government capitals. There have recently been some first-class expressions of the changed attitude of banks, none finer than the new glass box of Manufacturers Trust on New York's Fifth Ave., which says through its glass architecture that its purposes are transparently public and its heart open like a book, though the old dignity is still there in the symmetry of the composition, the restraint of its lines, the nobility of its main proportions. Were this only typical! For there is coming along a whole rash of new banks, in city after city, designed supposedly by experts, whose architecture is nothing but a wild orgy and "modernistic" abandon of flying canopies, weird façades, barbarous colors; architecturally these banks inspire the same sensation, in knowing people, as beaded African chieftains in the well-known stovepipe hat.

An outsider for self-expression

Independent architects are the ones in best position to help the corporate client on his most troublesome problem of all-around architectural expression. Thorough and conscientious though staff architects and engineers may be, they are too directly under command from within, too involved in internal forces. It is significant, therefore, that some of the most intelligent and powerful corporate groups have sought outside help precisely when self-expression was their problem.

Fruitful collaboration with the outside architect demands its own new techniques, however, if it is not ended in frustration. What architects must do on their side is important enough to merit separate consideration; but a few guidelines can here be mentioned. First of all, the architect must inspire confidence in practical matters before he will be given confidence in intangible ones. At a round table of architects and corporate clients held by FORUM in June '53, the greatest complaint of the clients was on the score of undependable cost estimates. Their second greatest complaint was against inadequate engineering. For these are not amateur but professional clients, and they did not grow big themselves by being slipshod.

The very composition of today's architectural firm, and whether professionals other than architects are included among its principals, is affected by these conditions. It is not simply a matter of beefing up the traditional architectural office to compete with the "AEC" (architect-engineer-contractor) three-in-one package. It is a matter of getting a building team that can speak with authority and in specific detail to the members of the corporate client's team. When architects have learned how to make this over-all contact, all along the corporate line, learning what their clients want and how to give it to them, there is little that can disturb the long relationship which, for example, Voorhees, Walker, Smith & Smith have to the Bell Telephone Co. or Albert Kahn Associates, Architects and Engineers, have to the Ford Motor Co.

A formula for superior architecture

Meanwhile the management must use wisdom and ingenuity in getting the best from independent architects. The independent architect must, for example, be brought in at top level and backstopped by an individual of top authority so that the big over-all concept of architectural form is not debased by a host of contrary minor decisions that end by destroying it.

A single story of ingenuity may illustrate this. When Architect Roland Wank years ago revolutionized civil architecture along the dams of the TVA, most people thought this was owing entirely to architectural genius. What really happened was this: Lilienthal and his administrative aids knew that the project must be made exciting and impressive to the people. They knew it must also be designed by engineers. They feared that the engineers would destroy piece by piece many a fine architectural idea, not because of hostility but because of the engineer's inborn suspicion of things done for looks. They therefore arranged that the architects *not* report in the usual way through the engineers but that engineers and architects both report to the administrative officers, in parallel. Because of high ability, good temper and fine understanding all around, hot arguments were resolved and a superior job went forward.

It has been well said that fine expressive architecture still depends in the end on imaginative individuals, architects and clients. It does; but only insofar as both know how to work today through the processes of the large-scale organization.



Herbert Gehr—LIFE

© *Ezra Stoller*



Two banks: built originally as a customs house, the old National City Bank building was intended to appeal to its customers through the dignity and reserve of its interior design, while the modern glass-walled Manufacturers Trust inspires the confidence of its patrons by architecturally making its dealings an open book. Architects, respectively: McKim, Mead & White (1908 remodeling) and Skidmore Owings & Merrill.



Piazzo del Campo, Siena; faithful to a master plan drawn up in 1218

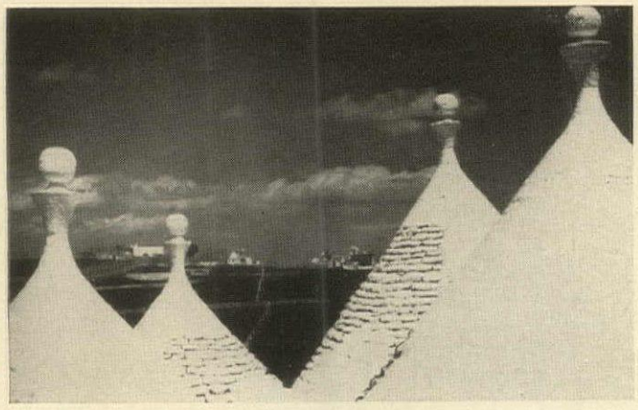
BOOK REVIEW

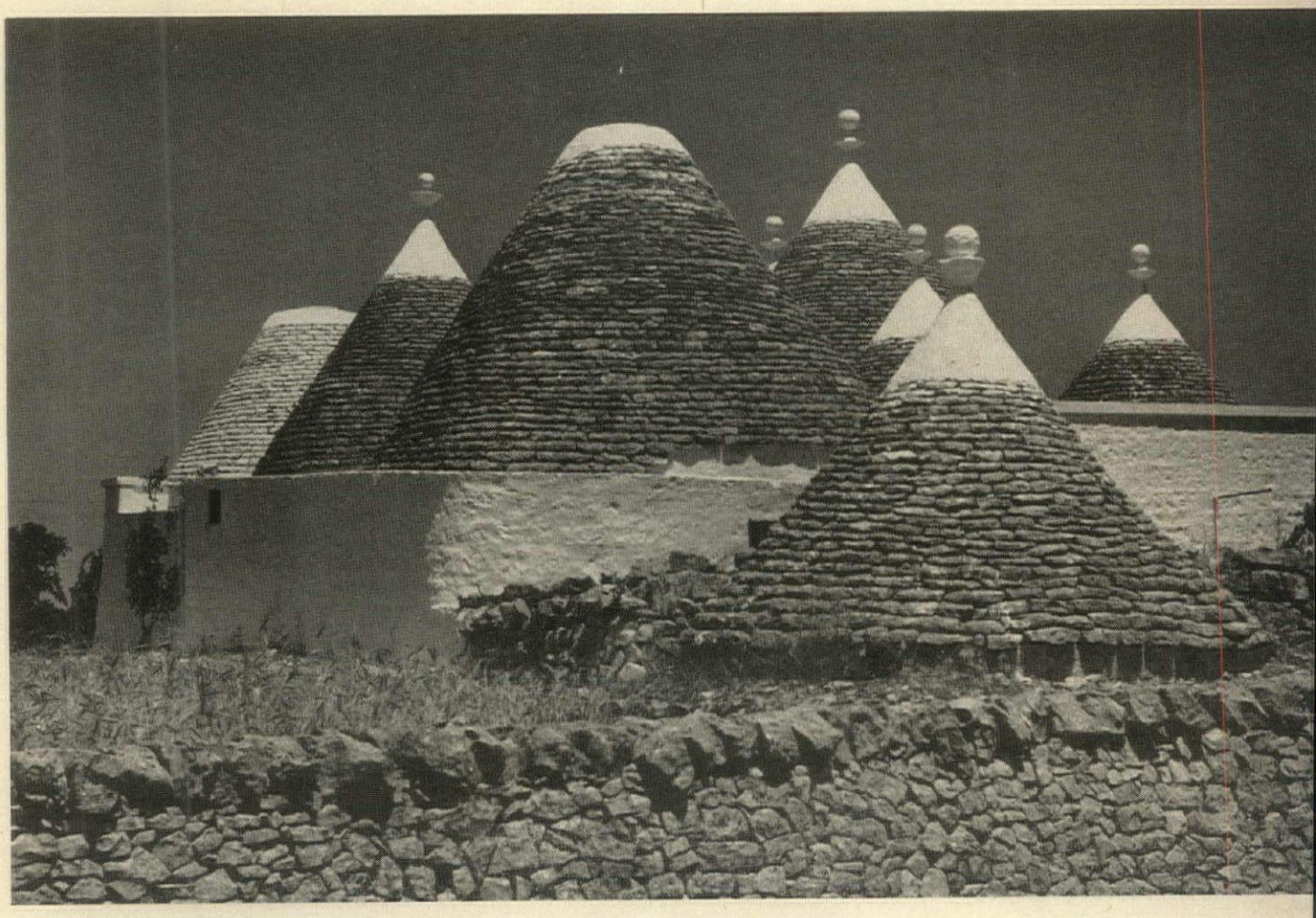
ITALY BUILDS

A new book by G. E. Kidder Smith pictures Italy's modern buildings in the context of its architectural past

In an age of specialists, G. E. Kidder Smith is an admirable throwback. Architect, author, photographer, he is the uncompartmented man, taking nothing less than all visible environment as his province. The photographs on these pages are a sampling of hundreds of extraordinary views from his camera in his new book.*

* Italy Builds. Published by Reinhold Publishing Corp., 430 Park Ave., New York, N.Y. 264 pp. 8¾" x 11¼". Illus. $10





Ancient dry stone farmhouses near Alberobello, south Italy

With such a guide, this vicarious trip through ancient and contemporary Italy is an experience on many levels. Kidder Smith the photographer knocks your eye out with the sculptural architecture of fishermen's houses in the Bay of Naples; meanwhile Kidder Smith the architect comments on its parallel to recent work of Niemeyer and Le Corbusier, and Kidder Smith the journalist sets down a lava and lime-milk recipe for the fishermen's handsome, impermeable 300-year roofing.

The level which deserves the most careful reading (and looking) is that in which Kidder Smith the teacher discusses the principles of townscape behind successful works of Italy's past, with attention to their relevance today. For instance, as he takes the reader through urban squares (sometimes step by step, view by view), he unveils the techniques of contrast—contrast between the confinement of approaches and climactic openness, between horizontality and verticality, between vistas of enclosure and vistas of escape, between sobriety and fantasy in the surround, between pedestrian preserve and vehicular river. Contrast is the clothing of urban order, fundamental to the esthetic of city planning (as some of the English have been rediscovering), yet it is little understood and almost universally disregarded. *(continued)*

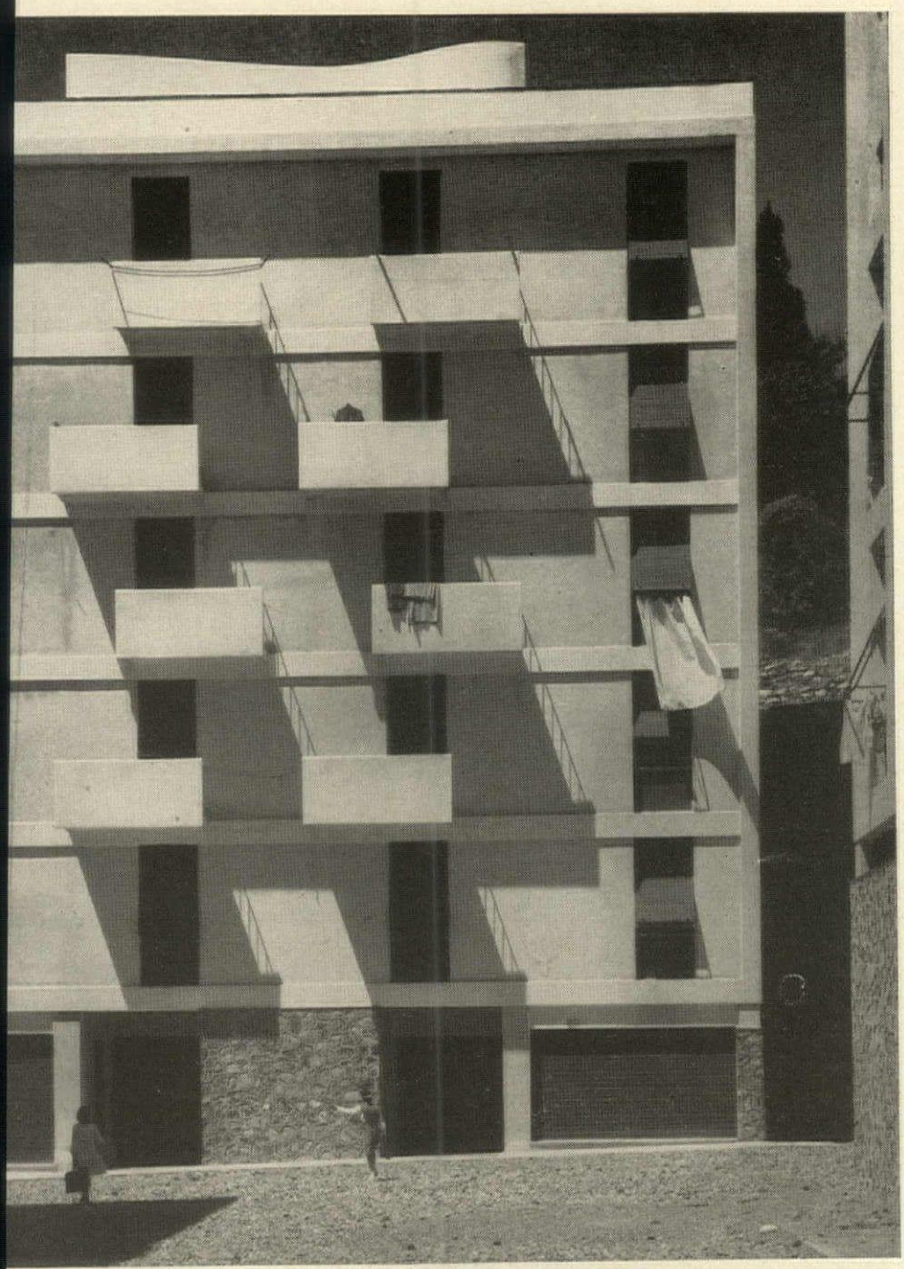


Piazza San Marco, Venice, viewed from above the doorway of St. Mark's

ITALY BUILDS—*continued*

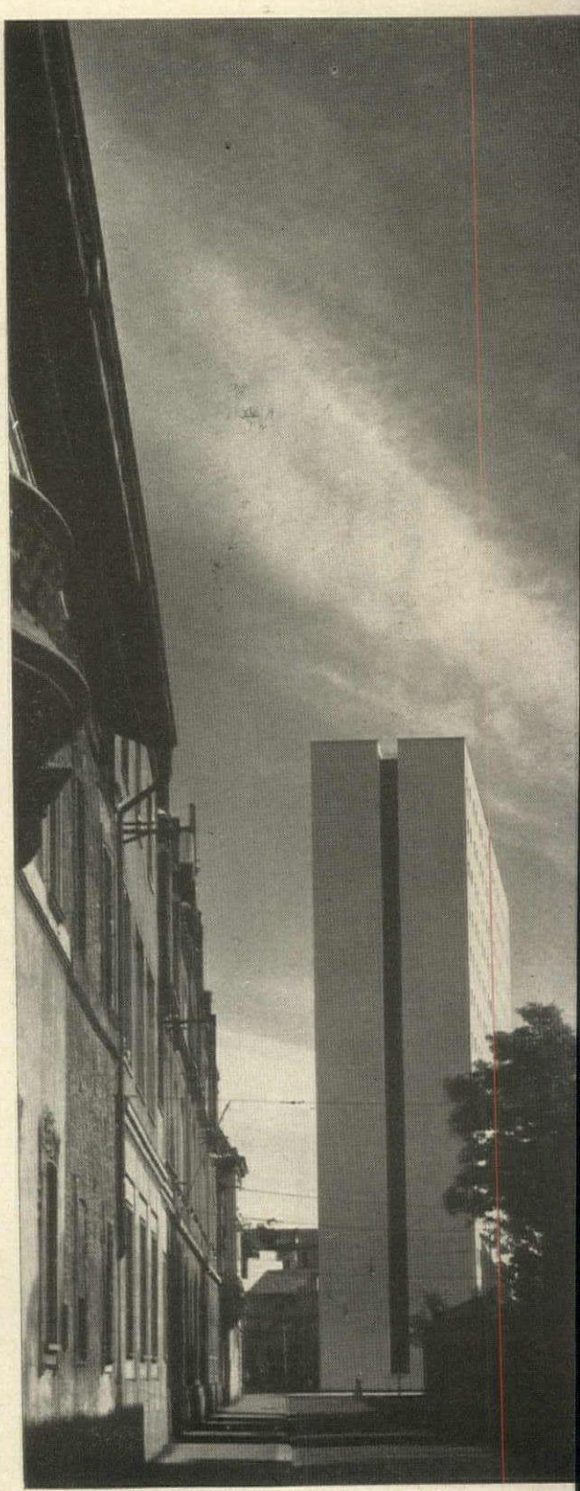
Much of the spatial excitement and vitality of the old squares, Kidder Smith points out, are owing to elements insignificant in plan; the vertical punctuation of fountains, obelisks and the like, subtly placed to pull hundreds of square feet of open area into three-dimensional focus. The most successful city or neighborhood squares, he says, are often those which take advantage of irregularity in terrain, like the Piazzo del Campo (p. 114) for instance, with its theaterlike contours, further emphasized by radial-lined paving. Even a drop of a few inches can count, he demonstrates. Mildly irregular terrain is a fairly universal city resource; maybe it takes what Kidder Smith calls "the cheerful conquest of living with little" to resist the urge to obliterate it. The success of arcades he attributes—with a bow to American shopping centers—to their trick of making a person feel let in, a participant in architecture or city, instead of a walled-off onlooker.

The general level of contemporary Italian architecture, says Kidder Smith, is low and he makes no bones about describing its faults and the sources of its faults. But it is the peaks that he pictures, and a magnificent array they make. Peak among the peaks is Engineer Pier Luigi Nervi. Kidder Smith photos of his work have already been seen by FORUM



Low-income apartment for the Housing Authority of Genoa; Giulio Zappa, architect

Apartment hotel, Via Corridoni, Milan; Luigi Moretti, architect



readers (Nov. '53). The contemporary half of the book fully justifies the author's statement that "the best is characterized by a lively structural expression and daring, clever spatial flow and interplay, an unequalled integration with painting, mosaics and sculpture, a challenging questioning of accepted thinking, a strong feeling for geometry, a native elegance and a highly effective working-togetherness with architecture from past ages."



EXCERPTS

Outside opinion
and comment
on the building industry
from the rostrum
and the press



Opinions expressed
in these excerpts
are not necessarily those
of the FORUM's editors

Tomorrow's curtain wall

Excerpts from a talk by Architect Max Abramovitz before the Building Research Institute's conference on curtain wall construction

We must always remember that the sum of the parts does not make the whole in architecture, nor is the whole the sum of all its physical parts. There are intangible qualities of the esthetic, the emotional and the physical well-being of space which combine to make a satisfying building. Technicians must never develop curtain wall systems that will hamper the search for these qualities by the sincere and *creative architect.* He is and always will be the leader in his field and he must remain flexible and free to adjust to the aspirations of our society, a society that respects the freedom of expression of the individual. This society, I feel certain, will resist an imposition of an inflexible expression on our architecture—one unable to adjust to the constant and healthy change for better living and better building.

A few of my colleagues feel that we are now in the golden age of architectural expression, that all the answers lie therein and that we should now perfect the details. I don't agree. I don't feel we have developed an architecture that permits man's moods, man's complex life and man's individuality to reach his full scope and potential. Therefore, we must continue to be open-minded for any advance.

Some are so positive that the answer lies in today's pattern of architecture that they are now ready to warp the individual to this pattern. I do not see how that mood can survive because it runs counter to the basic philosophy of this country and is thereby doomed to failure.

We must not let curtain wall construction fall into this trap of over-self-confidence. I worry when I see so many organizations attempting to sell it as so much wall paper to architects and potential clients. This kills the good in it.

If manufacturers constantly improve the curtain wall's technically weak points, if they can tool themselves so that it can be adjusted to the imagination of the creative people of the construction world and can be used economically on small as well as large buildings, and can be used with as much variation as wood construction has permitted them in the past—if manufacturers can do all this, I feel the curtain wall will survive. That means that methods of tooling, be they dies, or rollers or molds, must be devised so cheaply that they do not hamper new ideas and cause excessive or unreasonable standardization or force curtain construction into a high price bracket.

The benefits of mass production, of dry wall construction, of speed, of freedom from weather problems and of simplified techniques can then be passed on to the small building as well as the large building.

My plea to manufacturers is—*don't jell*—or if they do temporarily—to be certain that their research is carrying them on to the next step. We architects will always be looking for something better and more attractive to do our job with.

We also want color—color that is weather and sun fast. If the color is an enamel or an applique, it must not chip or break in erection and must not permit any corrosive action from within or without.

And we want texture. It is a designer's tool as well as a technician's tool and for some materials a technical necessity. The technical limitation of most materials will force the use of texture and pattern unless very small units are used. (And small units are contrary to our trend to larger units and fewer joints.) Experience has convinced me that if metals are used—patterns must be developed to work with and adjust to the qualities and limitations of the metals. Esthetically it can be pleasing, provide accents and contrast and also give our structure a life of light and shade and relief that the movement of the sun is ever ready to provide.

We want materials and systems we can use for the different climatic requirements. We would like to see walls which can deflect heat, heat themselves by thermostatic and electronic controls and keep heat in. We want freedom for space disposition within buildings; we are annoyed by the complications we must put up with now—such as the present method of climate conditioning within buildings. They force us to use a complicated network of ducts and piping which destroys space.

Finally, it is ridiculous to accept the fact that today it takes nine months to a year to create a substantial building, with its hundreds of drawings for plans and details. The span of two to two-and-one-half years from conception to execution is too much of one's life to devote to one building. If we can discover how to shorten that substantially it will give us all an opportunity to do more exciting things and provide more shelter for all.

Heating 50 Years Hence

Excerpts from an article by I. W. Cotton, erstwhile chairman of the Committee on Research of the American Society of Heating and Air Conditioning Engineers, in Heating, Piping & Air Conditioning

By 1955 in the US the following progress will have been made:

- Year-round air conditioning will be installed in 88% of all residential units; 100% of all hotels, motels, or other hostelries built since 1955; 95% of all commercial units; 92% of all industrial buildings; 100% of all amusement places, coliseums and other public assembly units; 100% of all churches; 100% of all schools and higher education units.
- Purified, odor-free, and medicated air will eliminate infections in all air-conditioned environments.
- Indoor climate will include healthful lighting worked out by the cooperation of heating, air-conditioning and lighting engineers. The best conditions prevailing in brilliant sunshine and mountain-fresh air will apply indoors. No rainy-day gloom!
- Heating loads and cooling loads will be met by perimeter air. Ventilating requirements will be met by separate systems, automatically controlled to meet exactly the spot requirements for clean, odor-free, and medicated air.
- Most heating will be provided by the sun, directly and through storage units.
- Very inexpensive cooling will be available through the utilization of storage-type heat sinks—or cooling sources—for refrigerating equipment.
- Individual garments similar in principle to 1955 electric blankets, but capable of providing either heating or cooling, will be widely used. They will receive heat or cold from remote central storage points by metered electronic impulses.
- Heating and air-conditioning systems will be able on short notice, when necessary or desirable, to cast loose from terrestrial energy and go directly on solar.

Kindred Studio



Plant Location—1965

Excerpts from an article in the Harvard Business Review *by Maurice Fulton, partner in Fantus Factory Locating Service*

In 1928 a prominent industrial engineer, Albert L. Scott, remarked at a business conference in New York that, because of climate, "you would hardly think of locating a plant which was to make rubber tires, let us say, in Florida." That was perfectly true then. But today there are several tire plants in the South. Air conditioning has made climate a much less important factor in plant location.

Here are some of the important changes in plant location factors which I foresee during the next ten years:

- The labor force will grow in size. To meet the increasing need for skilled workers, companies will rely more on in-plant training and supervisors, less on recruiting of ready-trained workers. The farm boy will be recognized as a good trainee for skilled work.
- Countless new areas, states and communities will meet management's personnel needs. The relative advantages of smaller communities will become stronger. In sum, labor supply will become a less critical factor in locating new plants.
- Technological developments in fuel and power and better distribution will also mean fewer restrictions on the list of plant sites which management can seriously consider.
- Water, on the other hand, promises to become a more critical factor in plant location. Local shortages and pollution problems will rule out many otherwise good sites.
- Technological and economic changes in transportation will combine to break up many patterns of plant location that are suitable today. The result will be greater decentralization.
- State governments will take measures to make more communities attractive; there is a possibility that the federal government will force management to take more account of dispersal, making national defense a more dominant factor.

Labor

Tomorrow's plant-location seeker will without doubt take a deeper interest in the social and cultural background of the people who may be employed in the plant. Sylvania Electric Products, for example, in assessing the "caliber of the people" in a community under study inquires into "the potential intelligence of the community"; management is concerned with the question of whether the people possess the ability to grow in terms of added responsibility.



Assuming that local conditions permit, it is quite conceivable that companies will refine their evaluations of the labor situation with 1) psychological testing, 2) investigations into the ethnic background of an area, 3) predetermination of local population attitudes toward industry in general, the specific industry in particular, and the personnel running the plant, and 4) polling of local social and political views. With the capital investment in future plants likely to become greater and greater, care in getting the right kind of people to operate those plants will become greater.

Fuel

It is quite conceivable that the next few decades will see a return to a greater use of coal. Of all three major fuels, coal shows the greatest proven reserves. Technological developments in the handling and use of coal may eliminate some of its present-day disadvantages. Further mechanization of mines may reduce the cost of extraction. At the same time, increased costs of natural gas at the well head and higher transportation costs should tend to raise delivered gas costs; and competition from the residential users, who represent a preferred market because of higher margins, will probably continue to limit the gas supply for industrial use in many areas.

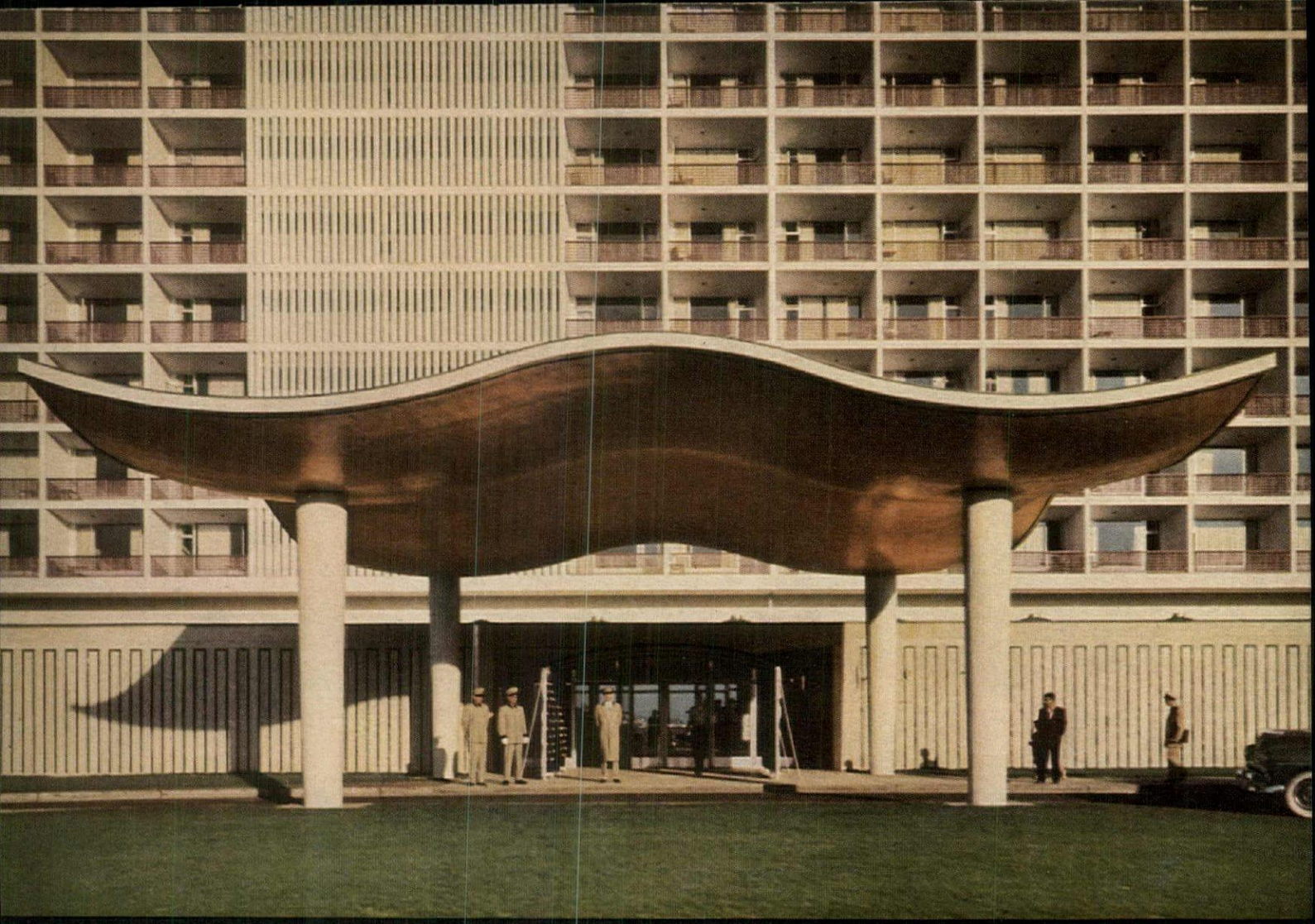
What about the possibility that significant new sources of low-cost power will develop in the next decade? Atomic power is the most promising prospect, but means must be developed to provide for the sale of plutonium as a side line.

Water

The country, as a whole, currently has a plentiful water reserve. Unfortunately, local shortages exist in all parts of the country. It is the surprising number of these shortages—and the number is still gradually increasing—which promises to make water a more dominant factor in the plant-location studies of tomorrow.

A public water supply is generally preferred by industry over a private system, unless, of course, huge quantities of water

continued on p. 170





Photos (right & opp. p.): © Ezra Stoller



Istanbul's new tower looks out across the Bosphorus to Asia

High above the minarets of the Ottoman Empire,
modern Turkey builds a symbol of progress, a focus for entertaining,
and a magnet for the tourist trade

HILTON'S NEWEST HOTEL

The big white honeycomb rising over Beyoglu, the newer section of Istanbul, is one of Skidmore, Owings & Merrill's most maturely handsome buildings to date—a strong, well-ordered expression of modern hotel design. It shows, among other things, how to capitalize on a hillside to gain the excitement of two major levels, with interior and exterior views from a wide variety of public rooms. It also offers some good ideas on simplicity and flexibility of both private and public space.

To many Turks, who long ago discarded the fez and the veil in favor of Western ways, the new Istanbul Hilton symbolizes something else: the hope that Turkey, once called the "sick man of Europe," will become a healthy, wealthy and much-visited member of the international family.

Back in 1950 the Economic Cooperation Administration, hoping that new hotels would stimulate trade and lighten the burden of US aid, helped organize a European survey tour for Conrad Hilton, Hilton International's John Houser, and Louis Skidmore and William Brown

Old landmarks: the mosques of St. Sophia, Sultan Osman, Sultan Ahmed



Golden canopy (top left), dubbed the "flying carpet," is modern version of entrance to sultan's palace, suggests wave motif traditional in Turkish art. Behind low wall of inlaid Italian marble is patio bazaar, seen from lobby (below left). Here hotel's crisp international style is again splashed with vivid local color.



Photos: © Ezra Stoller

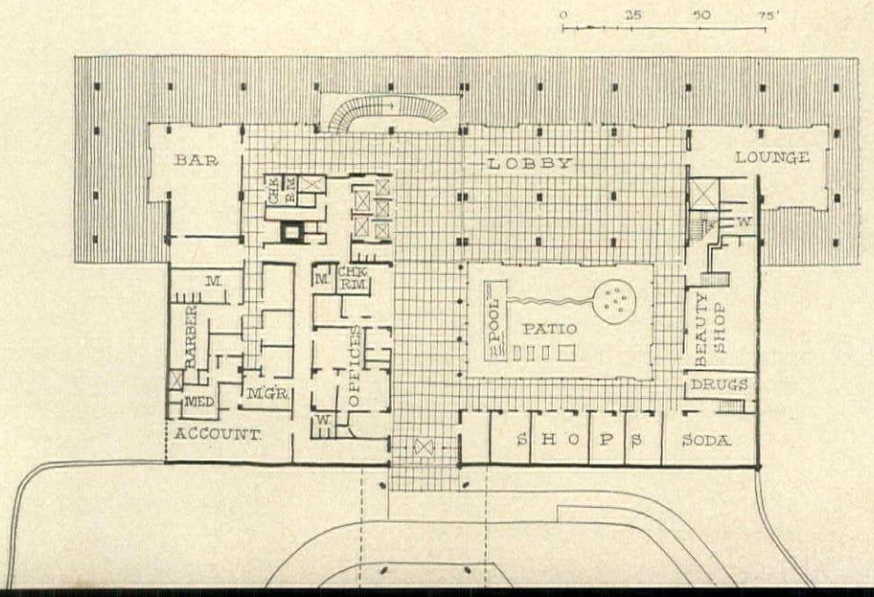
Broad entry moves past reception and elevators at left, glass-walled patio at right, then fans out into lounges and cocktail-snack bar along sweeping view.

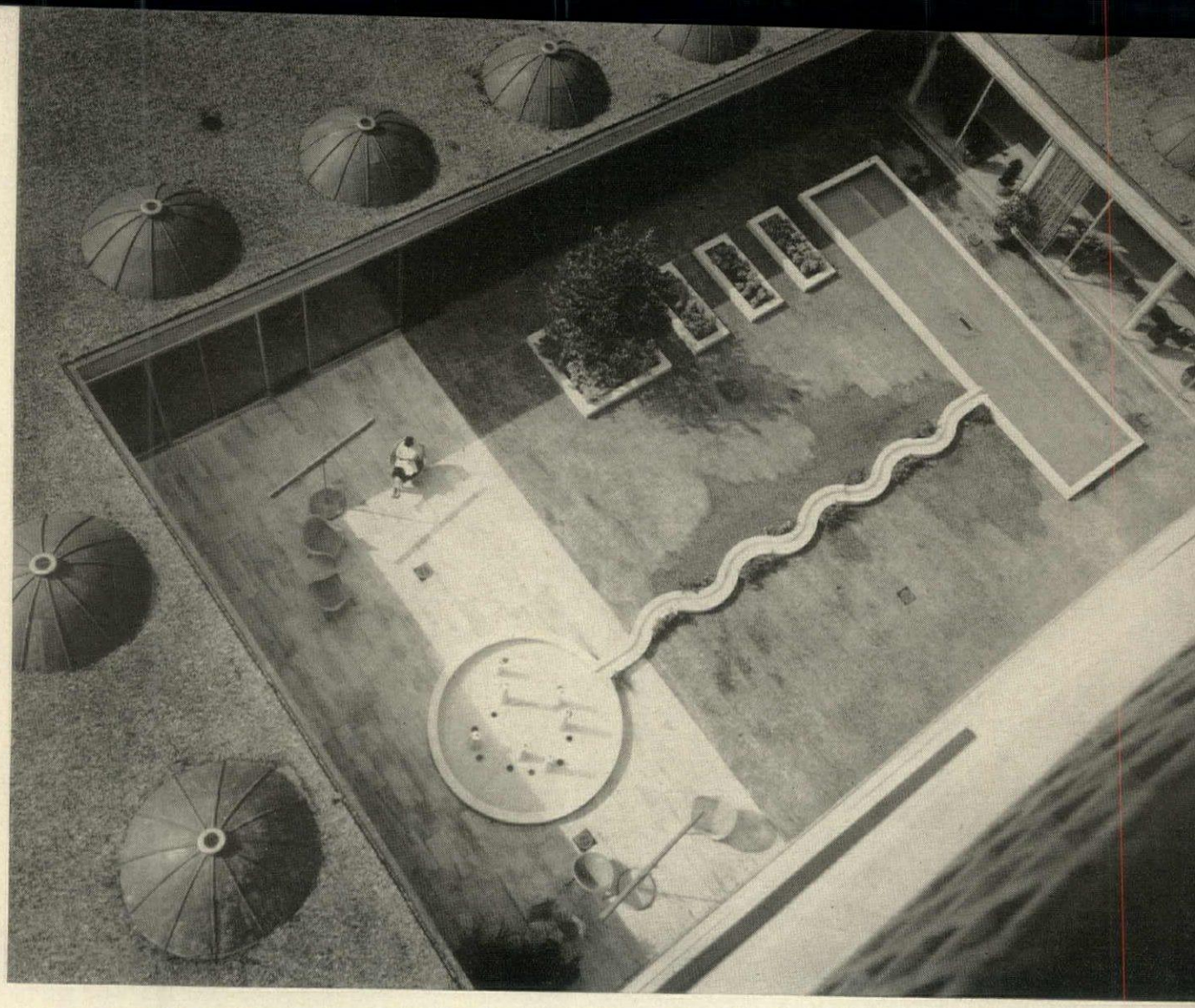
Lobby level flows out toward the view and in toward a patio bazaar

of SOM. The Turkish government, eager for hard-currency exchange and lacking modern facilities for tourist, state and business functions in Istanbul, agreed to put up the price of a new 300-room hotel, plus a magnificent site in a public park overlooking the Bosphorus (photo above). Following the formula worked out in Puerto Rico's Caribe Hilton (AF, Mar. '50), Hilton International supervised the planning, gave some 20 key Turkish personnel a year of training in its US Hilton hotels, supplied the necessary move-in expenses and operating capital, and now runs the hotel on a 20-year lease for one-third of gross operating profits.

Since its splashy opening last June, the $7 million Istanbul has averaged over 95% occupancy, about 60% Americans (who pay the equivalent of $16 to $18, plus meals and a 15% service charge, for a double with a Bosphorus view). A swimming pool, *cabañas*, bar and tennis courts are being finished below the hotel and there is already talk of a 200-room addition.

OWNER: Turkish Republic Pension Fund
ARCHITECTS & ENGINEERS: Skidmore, Owings & Merrill (US), Sedad H. Eldem (Turkey)
STRUCTURAL ENGINEER: Prof. Said Kuran (Turkey)
INTERIOR DESIGN: Jane Kidder, director (US)
GENERAL CONTRACTORS: Julius Berger, Dyckerhoff Widman (Germany—joint venture)





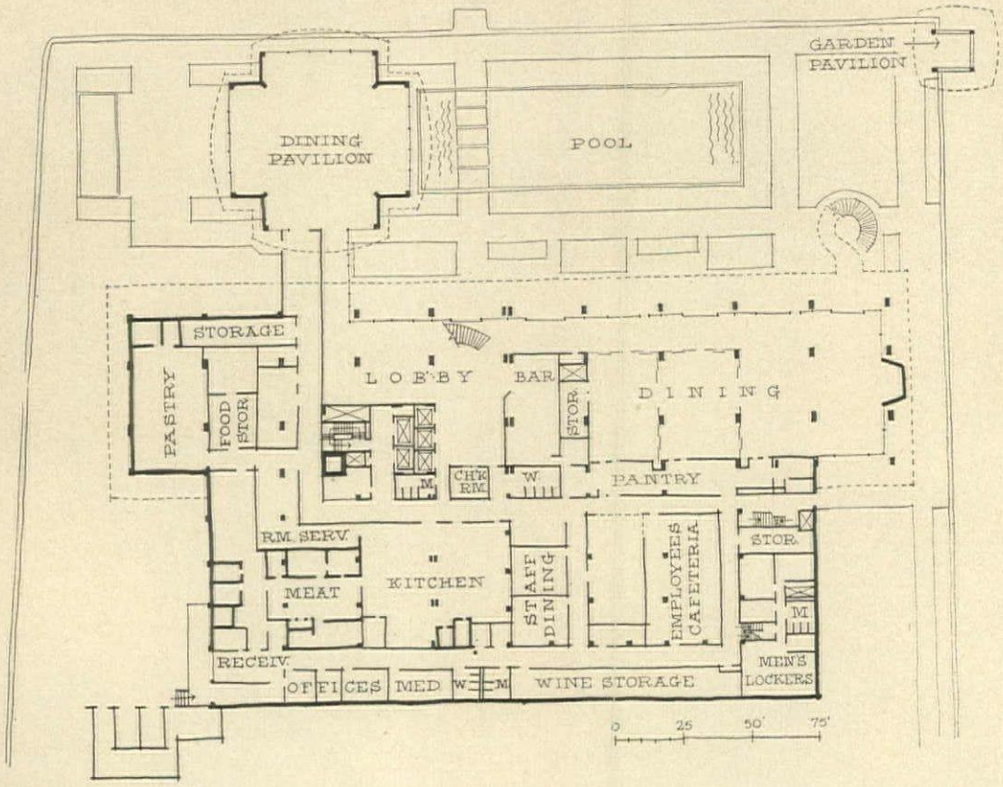
Patio has lead-roofed domes reminiscent of older Turkish courtyards, with small ports which let tinted light into shops below. Water runs from fountain to reflecting pool.



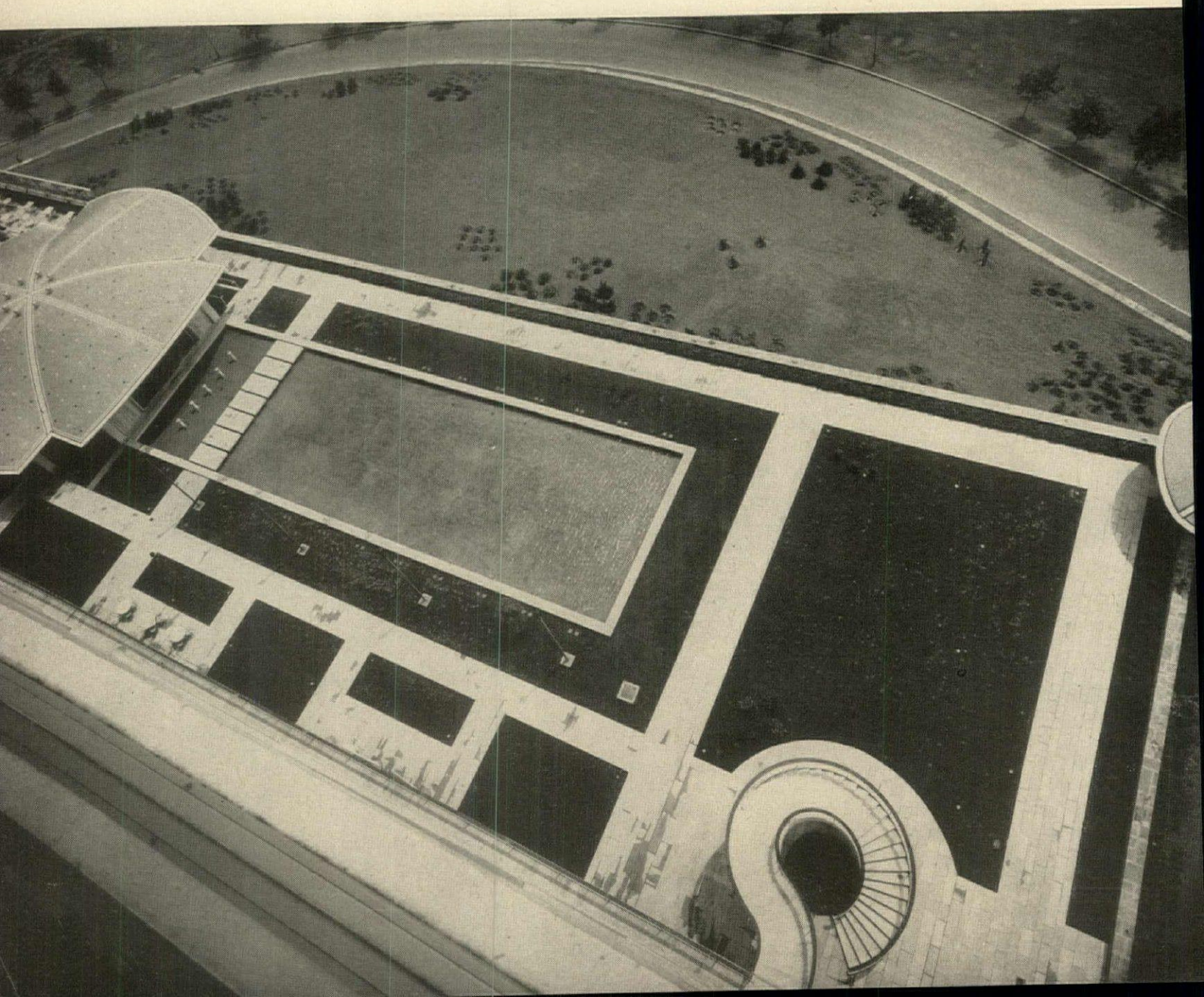
"Tulip Room" off main lobby has all the rich trappings of an Arabian Nights harem. Used as a ladies' sitting room, it can be screened off for private parties.

Main stair to dining room and garden is in glass-enclosed double bay (see plan), keeping it out of main-floor circulation and separating terrace into cocktail and sitting areas.





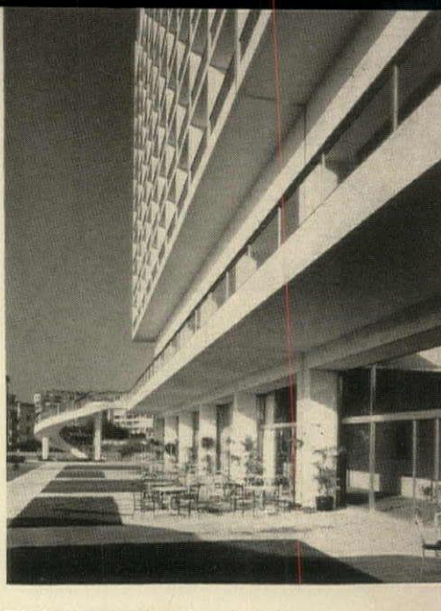
Garden level: lively





Photos: © Ezra Stoller

Circular stair sweeps down from terrace to garden below. Small kiosk at one corner echoes larger pavilion form, leads strollers out to relax and enjoy view.

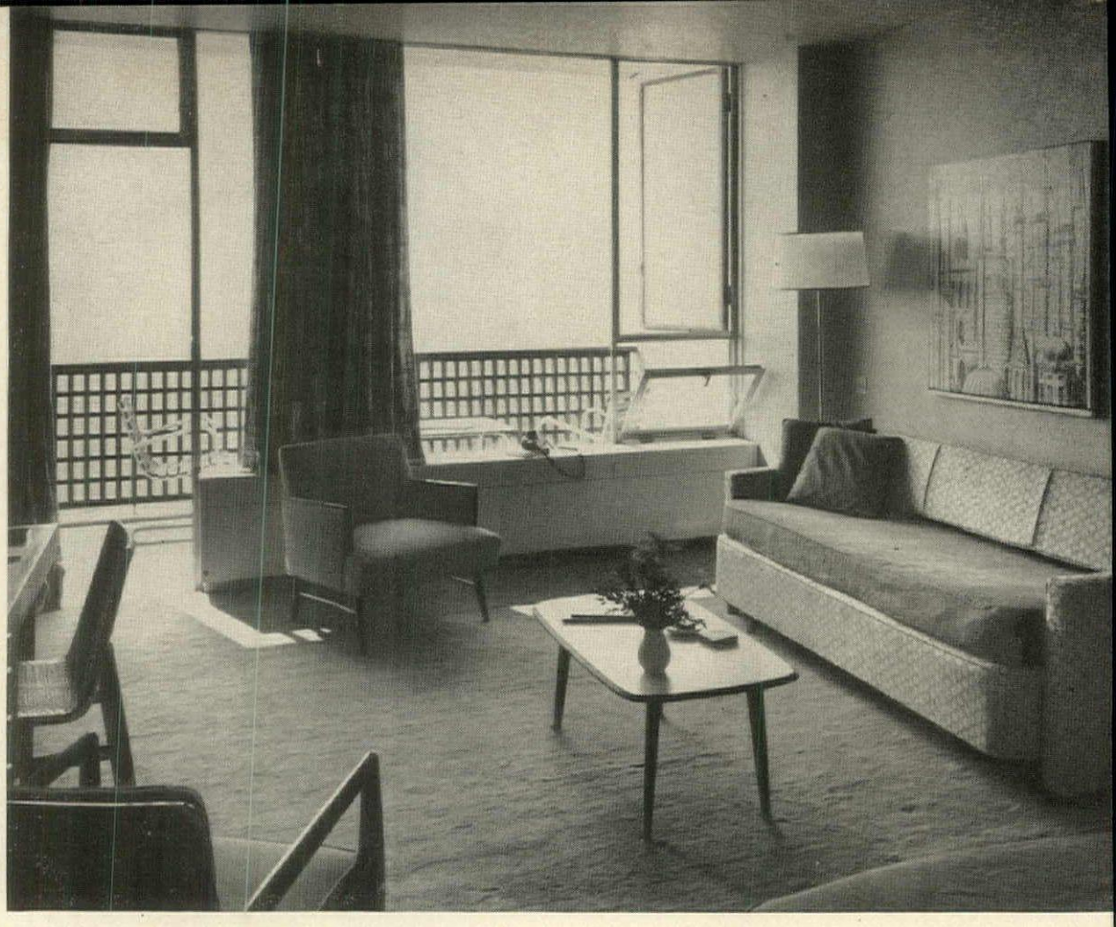


Dining room and bar survey garden through walls of glass. Note expansion joint which runs up columns and overhangs, dividing hotel in half as earthquake precaution.

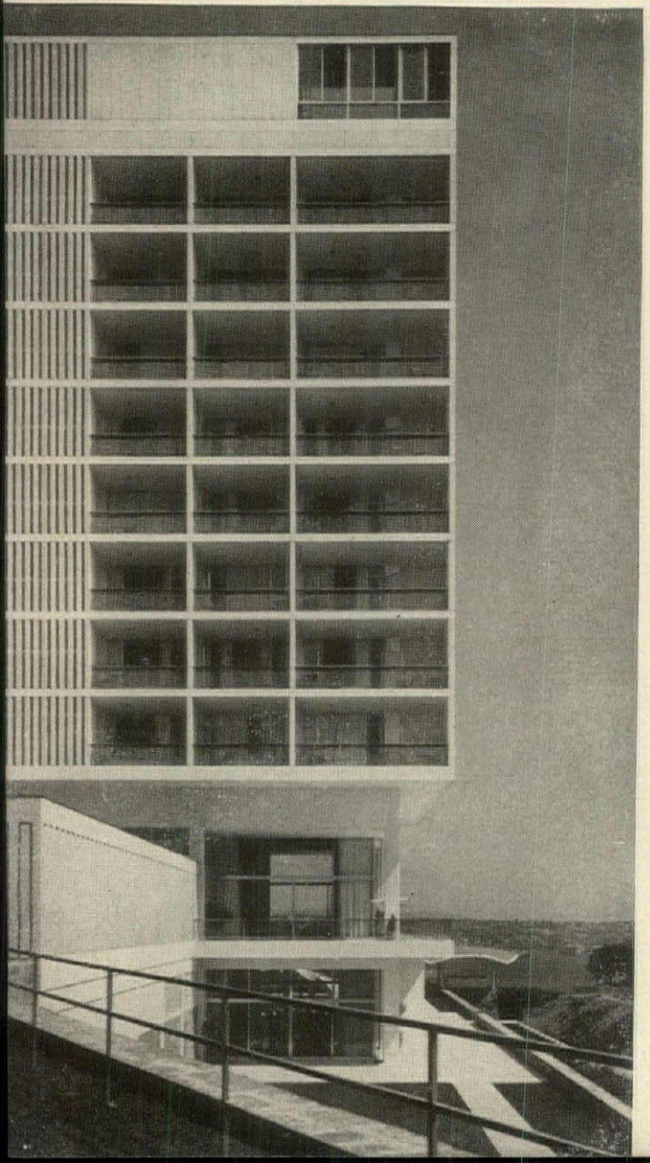
shapes accent a formal pattern

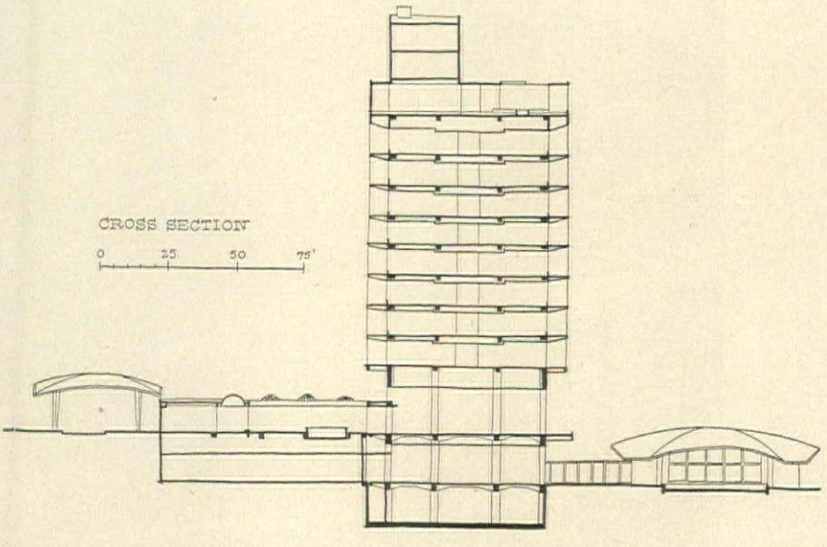
Supper club (below) has gay, blue-tiled pavilion roof. It is linked to kitchen end by double passageway, flanked by lighted fountain pools and dining-dancing terrace.



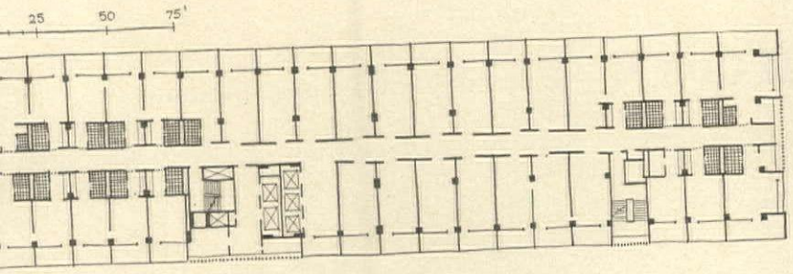


A view in the rooms, a garden in the sky





Grid pattern neatly unifies room balconies and precast screen of stairwell and roof. Big concrete beams (see section) save steel and resist earth tremors.



Sleeping floors (above) have bed-sitting arrangement in half the rooms (left). End rooms rent singly or as two- or four-room suites. Under glass walls are heating units; breezy climate makes air conditioning unnecessary except in public rooms.



View to Asia: over teakwood grilles of bedroom balconies guests look down on Bellevue Park's stadium and palace mosque, out to Bosphorus and Sea of Marmara. Balconies are 6′-4″ x 13′-6″; bedrooms are squarish 14′ x 16′, and 8′-6″ high to hung ceilings.

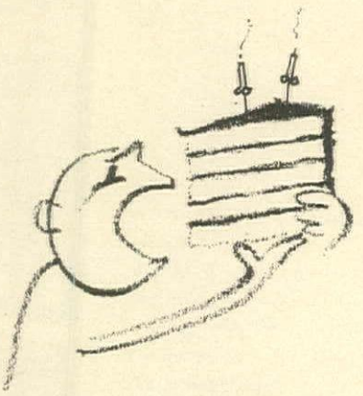
Photos: © Ezra Stoller

Roof garden: elevator lobby with serpentine glass wall leads down to domed cocktail lounge and tea-dance terrace. Windscreen gallery provides sheltered strolls, views on four sides. Hotel, boasting talent and materials from 14 nations, cost $6 million ($20.60 per sq. ft.) plus $1 million for furnishings and operating equipment.



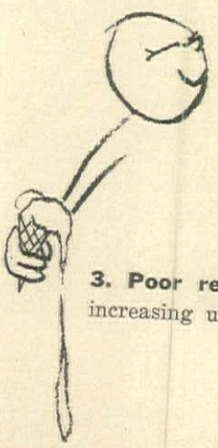
A COOKS TOUR OF THE KITCHEN—12 common and costly mistakes to avoid

Commercial and institutional kitchens, though they may vary widely in type, size and menu, have a common objective: good, fresh food, served with a minimum of cost and delay. Here, with the help of Consultant Arthur W. Dana, are some of the reasons this does not always happen —and what to do about it



1. Inadequate receiving area. Losses are almost bound to result if shipments are not carefully counted, weighed and checked for quality. Near the truck dock, yet well protected from the weather, there should be space for scales, desk (stand-up type is often most convenient) and enough room to set down deliveries both before and after checking, until they can be stored. (If receiving and storage have to be some distance apart, the scales should be closer to the storage point.) Minimum receiving area for a restaurant seating 150 is 8′ x 15′; larger kitchens need proportionately larger receiving areas to accommodate bulkier, less-frequent shipments.

2. Inconvenient dry storage. To store cans of fruits and vegetables for easy removal, use adjustable steel shelving, spaced 14″ to 15″ vertically to hold stacks of two No. 10 cans or three No. 2½ cans. Shelves should be no deeper than 18″ toward the ceiling, can be increased to 24″ where reaching is easier. Minimum aisle width between shelves: 2′, preferably 2′-6″ to 3′. Cases should be stored on pallets or platforms to keep them dry, can be handled by fork-lift or hand trucks. There should be adequate "current" storage near food preparation areas for frequent access.



3. Poor refrigerator layout. Due to increasing use of prepared frozen foods, many managers of new kitchens are already finding themselves long on refrigerator space, short on freezer space. Another common trouble: a freezer door inside the walk-in refrigerator often accumulates enough ice on its gaskets to stick fast. Best solutions are electrically warmed gaskets, or an independent freezer entrance with an airlock. Walk-in cold rooms should be flush with the kitchen floor so carts can be wheeled in and out. Doors must be equipped with safety latches (people *do* get trapped inside).

4. Not enough set-down space. In all departments workers usually need more counter or table-top space than they are provided with. When workers doing different jobs have to double up on a single work table or sink, confusion and arguments can result. A good rule of thumb is at least 4 lin. ft. per preparation employee (6′ where three or four ovens are used for roasting). Those preparing vegetables would welcome a root vegetable stand that keeps containers of potatoes, carrots and salad greens handy and off the floor. On both sides of a vegetable cutter or meat saw, counters should be provided for setting down the raw material and the processed food.

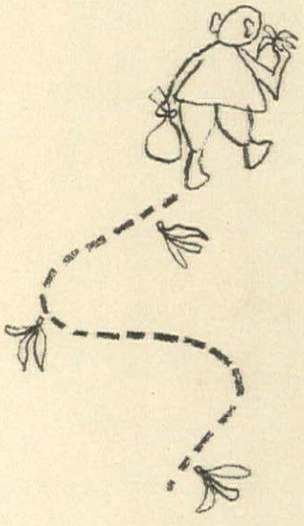


5. Narrow aisles, through traffic. Work aisles should be separate from traffic aisles. The pot washer in particular often has to work in the middle of traffic, without proper storage space; he should have a niche of his own near the cooking equipment, with a three-compartment sink (or pot-washing machine and two-compartment sink), at least one drainboard and slatted shelving for pot drying and storage. Work aisles should be at least 3′-6″

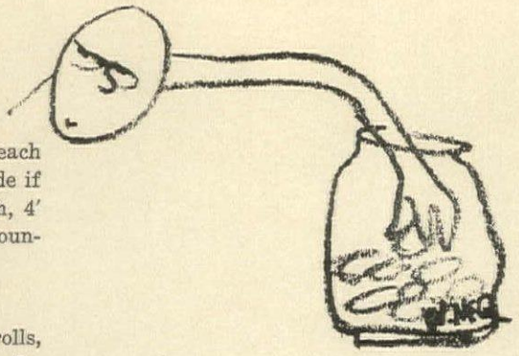
wide where workers must bend to reach under a counter or into an oven, 4′ wide if portable equipment must pass through, 4′ or 4′-6″ between two parallel work counters.

6. No cooling racks. When bread, rolls, pies, etc., come out of a big oven, the baker often has to spread them out to cool on needed work-table space or even on the floor. A vertical rack for stacking trays of baked goods takes up much less space, may be wheeled to serving areas. Another point in the bakery: fixed flour bins under counter tops are hard to clean; make them independent and portable (e.g., on casters) for easy washing.

7. Not enough steam-jacketed kettles. Soups, sauces, creamed foods and stews take much longer to cook on a range, where heat contact is uneven and of smaller area than in steam-jacketed equipment.



8. Scattered pickup points. Waiters often have to set their trays down on a table in the middle of the kitchen and scurry around filling them with orders. Each of these pickup points should have a cafeteria-style tray rest and be arranged in an orderly sequence. One wrinkle is an open-top "supermarket" refrigerator from which a waiter can help himself to salads, desserts, appetizers and beverages. The service buffet should be arranged so waiters can pick up hot foods last.

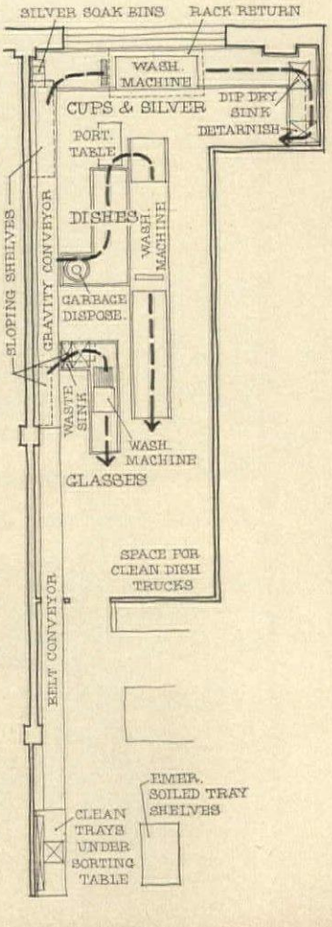


9. Long reach from cook to waiter. A kitchen worker often has to reach as much as 33″ across a warming table to hand the waiter a full plate, while the waiter reaches only about 6″. Serving shelves above the table help divide the reach equally. Many kitchens lack proper space to keep food hot until ready for serving. In addition to a *bain-marie*, good for pots but not pans, use food storage warmers with thermostatic controls and individually dampered compartments to retain or dissipate moisture.

10. Dirty dishes piling up. If possible, dishwashing should be done in an enclosed room of its own to reduce noise, heat and dampness through kitchen and dining areas. Good lighting encourages keeping dishes and equipment clean. Moisture-proof acoustical materials should be used on ceilings, and on wall surfaces above the 6′ mark. "Shock absorbers" are needed to keep trays of dirty dishes, which often arrive in spurts, from backing up and causing slowdowns and breakage. Multiple shelves or racks will receive a backlog of full trays from waiters, keep them out of the way until the dishwasher can get to them working at a steady pace. When conveyor systems are used, dirty dishes still pile up at the end unless a length of gravity rollers is added to stretch out six to ten trays in a row. A sloping shelf over the dirty-dish table (see plan) makes it easier to rack soiled cups and glasses for washing separately from dishes. Use of chemical "wetting agents" in the final rinse line of the dish machine allows water to roll off silverware, leaving it dry without need for toweling. For stacking clean dishes at the other end of the washing machine and distributing them without rehandling, there are special carts with shelves tilted slightly from the vertical to hold stacks of dishes. Special return slots for dish racks (see plan) speed up operation and keep the wet racks off the floor.

11. Improper sizing of garbage grinders. Most kitchens can profitably use mechanical disposal units. But too many small ones are hard to supervise (to see what's being thrown away) and being of lesser horsepower are more apt to get stopped up than fewer, larger units. Where local law prohibits disposing garbage into the sewers, some kitchens use systems which pulp garbage with water, pipe it to a remote area such as a basement, where it is dehydrated to a fraction of its original volume and dumped into bins for periodic removal.

12. Not enough sinks and lockers. Brooms, mops, etc., should be kept in a janitor's closet with its own sink; otherwise mop pails will be emptied into sinks that should be used only for food preparation. A hand sink, if exposed and convenient outside employee toilets, will encourage workers to wash their hands frequently. A bubbler-type drinking fountain nearby is a good idea. Last, every employee deserves his or her own locker; doubling up can easily result in friction over property rights.





ROUND TABLE REPORT

Confusion has been so general in Protestant church architecture that it could be resolved only by a return to the most basic principles. So FORUM called a small group of churchmen and architects to discuss . . .

. . . THEOLOGY AND ARCHITECTURE

Participants in the round table were: Dr. Paul Tillich, university professor at Harvard Divinity School; Dean Pietro Belluschi, School of Architecture and Planning, Mass. Inst. of Technology; Dean Darby Betts, Cathedral of St. John, Providence, R.I.; The Rev. Mr. Marvin Halverson, National Council of Churches; Architect Morris Ketchum of Ketchum, Gina & Sharp, New York; Dr. Paul Weaver, president of Lake Erie College, Painesville Ohio.

The discussion closes with the application to architecture of principles stated by Dr. Tillich in his introductory remarks. This is Dr. Tillich speaking:

I cannot deal with the architectural problem as such. The only thing I can do is to give some indications of what it means from the Protestant point of view. First, I shall derive some special principles from the general Protestant principle, then I shall give some of my ideas on art in general, and third I shall speak on the position of architecture in relation to these two.

What I call the Protestant principle could best be defined as the acknowledgment of the majesty of the Divine against every human claim, including every religious claim. From this it follows that no church, and no self-expression of any church, is in itself absolute. There is no absolute unconditional style in any religion, style in thought, style in doctrine, style in cult, style in ethics. This, of course, pertains also to the artistic self-expression of the church. It is true of all self-expressions of the church. It is true of all self-expressions.

To compare the situation with that of the Greek Orthodox Church, let me recall Father Florovsky expressing to me the classical Greek Orthodox idea that the icons, the sacred pictures, are not simply pictures but have in themselves, by their very nature, sacramental character. Therefore the church is justified in telling the artist definite rules according to which a sacred picture must be made. He has freedom in many respects but he has no freedom in those respects which make the picture sacramental. The Father complained that the Roman Church already in early ages had deviated from that idea and that Roman iconography is much freer, but, of course, as he said, less sacred, much less representing the Holy Power. Protestantism, developing out of the Roman Catholic Church, is completely free; and no Protestant artist can accept any rule for producing a picture except one rule, that if this picture is supposed to become a ritual or cultist picture it must be an expression of *ultimate concern*—it must be an expression of the Holy. This is the first point.

The second point derived from the Protestant principle is the close relation of Protestantism to the secular world and all kinds of secular creations. Out of the very fact that nothing is absolute in relation to the Divine itself, no expression of religion can claim absoluteness. The sacred sphere, as such, cannot claim priority in relation to God or superiority over secularism.

Protestantism has, as I once wrote, a passion for the secular. This of course is understandable only if we use a larger concept of religion, namely, religion as a state of being ultimately concerned. It is not necessary to go into the Holy of Holies, in order to find God. You can find Him in every place. When Solomon built the Temple, the omnipresence of God made it a problem for him to build a house of God at all. This is the second point arising from the Protestant principle.

Man in his existential situation is in bondage all his time to preliminary concerns. He is not in the state of investing every joy, every meal, every labor, with ultimate concern; this is why there is a sphere besides the sphere of the secular. God is not any nearer to the sacred sphere but we are not in the Heavenly Jerusalem

Brass screen behind altar of new chapel at M.I.T. catches shaft of sunlight coming through plastic skylight which gives cylindrical building its only natural lighting. Immediately upon full completion this remarkable chapel will be shown in detail in FORUM. Architects are Eero Saarinen and Associates. Screen is by Sculptor Harry Bertoia. *(Photo: © Ezra Stoller.)*

where there will be no temple because God will be all in all.

Then the third point that follows from the Protestant principle is manifoldness. Since there are many different forms of Protestantism there is variety of expression. But there must also be an element of unity. In order to be a Christian Church even a Protestant church must participate in the Christian event.

I define the Christian event as the appearance of a new reality in Jesus as the Christ.

Participation is possible only through tradition. Like my Episcopalian friends I criticize the Protestant idea that men of today can jump over 2,000 years and immediately be in the lap of Paul or John. This is impossible; it is only through tradition that we can participate in the past. On the other hand, Protestantism carries in itself the element of protest against tradition. The history of Protestantism is the balance between tradition and reformation. If one of them goes, Protestantism goes.

Therefore, Protestantism should not become what the psychologist Jung called it, a continuous iconoclastic movement. The destruction of symbols is tremendous in the history of Protestantism. Against this we have to fight. But we have to fight not in terms of making any symbol absolute, but either by eliminating some symbols that have lost their power or by reinterpreting those which still have it.

From these three points that I derive from the Protestant principle allow me to go on to some general artistic considerations.

Religious art is expressionistic

Here I want to start with a very shocking statement: namely, that all specifically religious art is *expressionistic* throughout the history of mankind.

Of course, even in naturalist and idealist art the Divine is not lacking, because there is nothing existing in which the Divine is completely lacking. Ultimately no irreligious art is possible. But in naturalist art the Divine is seen indirectly through the finite form and its relations with the finite world. Naturalism is possible regardless of whether or not the subject matter is taken from the symbols of the religious tradition. It is not necessary that a subject of a naturalistic painting is, e.g., a peasant dance; it can also be a Virgin or a crucifix that is painted in such a way as to be in the realm of finitude and without the power of religious expression, without religious meaning.

This leads me to the three levels of the relation between religion and art. At the first level, there is neither religious style nor religious subject matter; a landscape, a portrait, a bridge—things like that.

The second level has religious style without religious matter. It is expressionistic in the larger sense—not restricted to the group of painters we call expressionistic.

Then there is the third level, namely religious subject

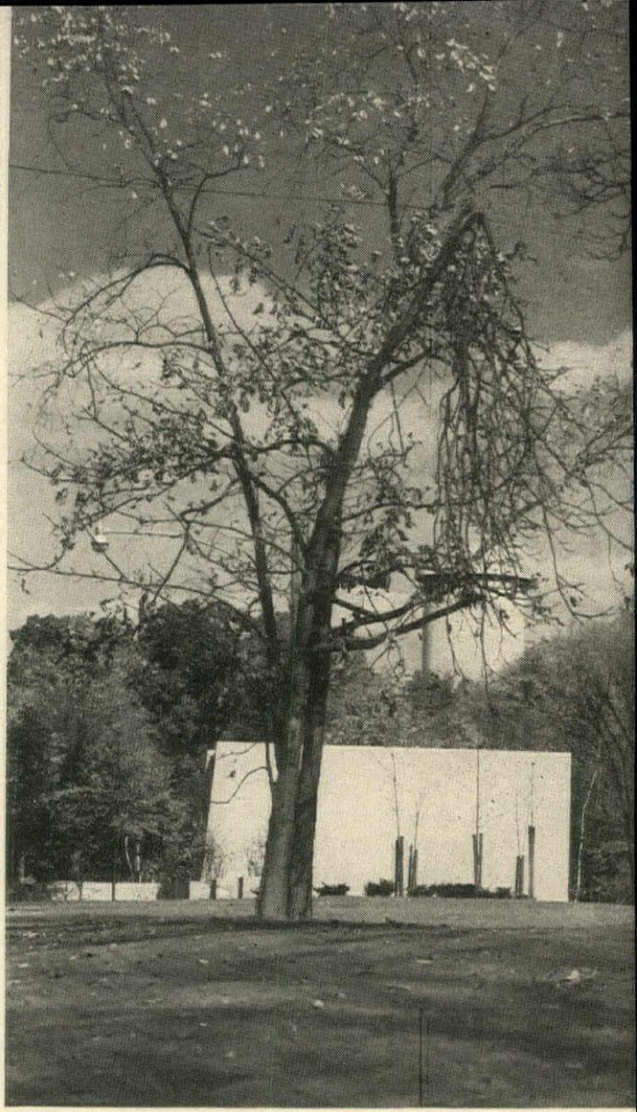
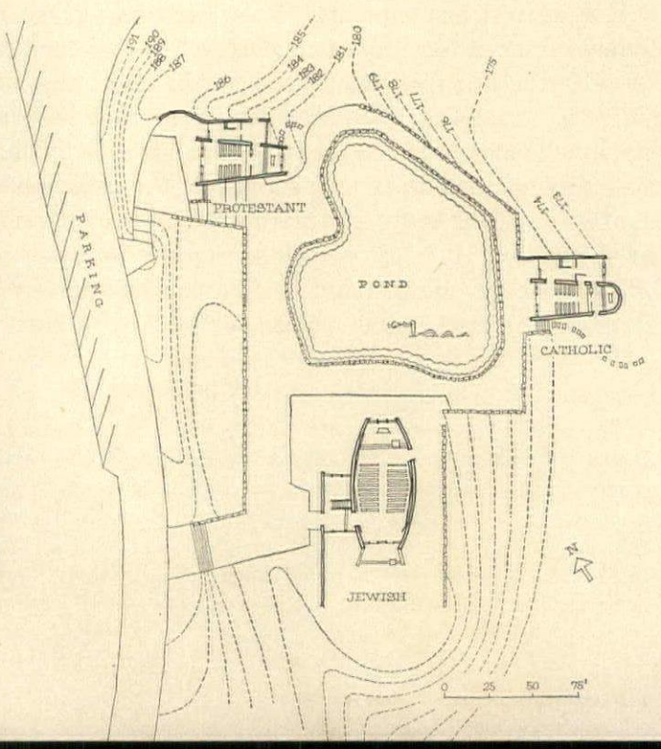


Photo: © Ezra Stoller

Brandeis University—a nonsectarian institution in Waltham, Mass., founded by Jews seven years ago—has given each of the three major US religions a home of its own on campus, rejecting the general-purpose nonsectarian chapel as an undesirable homogenizing of religion. Sited around an irregular pool, the three buildings are built of the same materials (block faced with brick inside and out). But within this over-all general similarity their shapes vary. Identifying signs are not necessary; glass end walls reveal the two different altars and ark. Total cost: $350,000, $30 per sq. ft. Architects: Harrison & Abramovitz.





matter but not a religious style, as in many pictures of the Renaissance and succeeding centuries.

The great tradition of religious art in all religions and in Christianity has the character of *expressionism* —expressing not the subjectivity of the artist but the ground of Being itself. This is so in the early Christian era and the Byzantine art especially; but you can see it also in early and later Romanesque and Gothic, and you can see it in some Baroque pictures.

Then something happened which I like to call the Great Gap which started after Rembrandt in the middle of the seventeenth century and goes on to about the year 1900; and in this Great Gap I see no important religious art. What I actually see is the continuation of naturalism as we have it in the late Renaissance and through the eighteenth and nineteenth centuries. The greatness of the twentieth century, it seems to me, is that it rediscovers the expressionist principle, namely the principle of breaking through the beautified naturalistic surface of things to the real depths which break out with disruptive power: not that the work of the artists is disrupted but the natural surface of reality is disrupted.

The last point here is the problem of Protestant art generally. If it is true that in Protestantism symbols have disappeared, as I said quoting Jung, then the question is: are we able today to bring new symbols into existence, or is this impossible? Certainly it is impossible if done intentionally. Symbols are born and die but certainly are not produced by intentional acts. Or are we to revive symbols of the past? This is the great difficulty for Protestantism which I see every day when I try to reinterpret theologically the classical symbols of faith.

When students at Union Theological Seminary assembled an exhibition of religious art of our time, there was an awful poverty in traditional religious symbols but a richness of secular subject matter brought into pictorial form in such a way that it had expressive religious power in itself, without trying to use the traditional symbols at all.

Picasso as religious painter

I was once asked, which is the greatest Protestant picture produced after 1900? I replied immediately, without reflection, Picasso's *Guernica*—the disruption of reality in which we find ourselves. Now this, of course, cannot be the final answer because such a picture is not an affirmative picture. It does not deal with the traditional symbols in any way. It raises the question but does not give the answer. But is it not better to raise the question honestly than to give an answer that is half or totally dishonest because of the traditional bondage?

This brings me to my last subject: the special position of architecture. I must ask to be excused for my inexpert speaking about it in the presence of experts. Yet

I believe that architecture cannot simply be seen in line with the visual arts and the arts generally. It has a very special character which the others do not have. It has first of all a practical purpose, namely to build a house. This is a disadvantage because architecture cannot be in the same way directly and purposely expressive as a picture or sculpture. On the other hand, it has a great advantage: it is bound by purpose to a definite character and cannot go wild with irrational imagination.

What does this word *purpose* mean? We discussed this when the *Bauhaus* type of architecture started in Germany and somebody invented the ugly word "dwelling machine." It was repulsive, but we tried to think what it could mean in a good sense and in a bad sense. My answer is that what must be done first of all in building is to single out from the infinite space, into which we are thrown in our nakedness, a piece of finite space which protects us against the infinite. The purpose of a building is always to produce something which makes existence in time and space possible for a finite being; to give him that limited space from which he can then go forward toward infinite space; psychologically it gives him what we sentimentally call a home. The metaphysics of home includes adequate surrounding materials but goes far beyond.

Architecture excludes forms which are not born out of the creative situation and which are superimposed only out of artistic traditions. I fought this battle all the years when I lived in a pseudo-Gothic seminary with a very large pseudo-Gothic church alongside that was being shown to visitors as a very good example of religious art. It is not that I have anything against Gothic buildings that were born out of the creative situation of the time when they were built; but if architects in the middle of the twentieth century sit down and study the blueprints of architects of the thirteenth and eleventh centuries the result is repulsive. One should never confuse imitation and tradition.

Baroque—mysticism from below

Now a few special problems that will probably be discussed more powerfully and adequately by all of you. It was said that in the book of Rudolf Schwarz (*Vom Bau der Kirche*—"Concerning the Building of the Church") there was a burst of light over the altar in Baroque. I have a quite different interpretation of the Baroque. It is the bursting forth of the underground of religious life against the Renaissance form of humanism. Baroque mysticism comes from below. Medieval mysticism comes from above.

The development of light in the churches is very interesting. Slowly the daylight replaced the light that is broken through stained-glass windows. The daylight is not the outburst of Divine light but rational light by which one can read and the congregation can see one another. Broken light is mystical light, and when in modern churches today the windows are tinted again I have a great sympathy for it. Yet I have no sympathy when they use figures. The early Gothic forms are not good when imitated. What we can do that was not done before is to use mathematical forms, pieces of color put together, and I think this is adequate to our feeling in which all forms of life have been brought down to geometric forms.

We seem not to be able any more to understand the organic forms in the way in which we did in former centuries but we are much better able to understand the underlying spiritual power of geometrical forms. We should not say that religious life must express itself in organic forms if it is the real possibility of our time to express it in cubic forms.

The ideal of holy emptiness

Then another consideration is the problem of sacred emptiness. One of the most important expressions of sacred emptiness occurred in Judaism and Islam—and was then forgotten because of the Incarnation idea. Christianity was able to have the Divine again in forms of finitude, and Christianity filled the churches with them. Today these forms, most of them, have lost their meaning. Therefore I do not hesitate to say that I am most satisfied by church interiors—if built today—in which holy emptiness is architecturally expressed; that is of course quite different from an empty church.

I have an especially negative feeling toward putting sculpture in a three-dimensional form into the church so that you can go around it. You never could do that in a Greek temple. The goddess looked at you and you could not go around her. The moment you go around it, it becomes an object among other objects. Therefore the walls are the only place where sculptures can be placed and look at you.

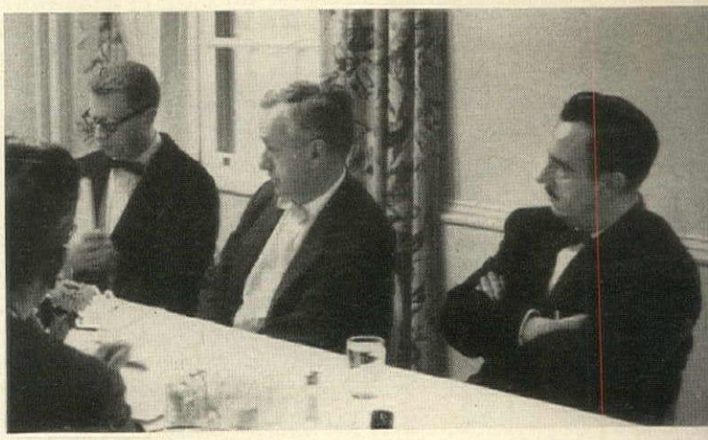
These few ideas bring me to an end. Probably the way modern religious art will be reborn is through architecture. If architecture leads, born out of purpose, then the same thing will probably happen that happened in early periods of mankind where the tool was loaded with magic power and therefore became beautiful. It was a tool and at the same time a work of art. The separation of technology and art is a very late development which can perhaps be recanted by an architecture which gives great possibilities in its very nature as architecture.

Let me close with a word on taste. If you are a relativist in this respect you can simply say that what was your taste in the mid-twentieth century will pass just as nineteenth-century taste has passed and we cannot accept it any more. I do not think such relativism is justified. There are criteria which are abiding.

I mean the principle of honesty. There is truth in every great work of art, namely the truth to express something; and if this art is dedicated to express our ultimate concern, then it should be not less but more honest than any other art.



Round table participants (l to r, above): Ketchum, Betts, Belluschi, Christ-Janer, Tillich, Halverson; (right) Halverson, Haskell (chairman) and Weaver



After Dr. Tillich's keynote,

here are some of the things they said:

BELLUSCHI: Architects have been thinking a great deal about symbols. By being creative, architects are in effect unconsciously setting up new symbols, if they possess honesty and depth of feeling and can avoid the temptation of transitory fashion.

TILLICH: You used the decisive word, the unconscious. Of course, we do that all the time.

Church and world

KETCHUM: Perhaps the most wonderful church would be a glade in the forest with a cross at one end.

BETTS: I have a multitude of contradictory emotions on that. In the first place, I would not consider any glade in a forest an adequate space because when we are talking about a space set apart for holiness I want to bring man in contact with the Creator of that space. This is *man working on his creation,* so the forest is out.

KETCHUM: I agree. But the thought of the glade has some beauty and simplicity that our new architecture might capture.

BETTS: The church must be supernatural in the middle of natural order. Naturalism partakes of the sin itself in any age. I think our greatest struggle in Protestantism today is to avoid on the one hand the despising of Nature and on the other hand the flight to the World.

CHAIRMAN: Now you said that in building a church—if I quote correctly—God through man was working on His creation. Is the distance so very great between that concept and what Rudolf Schwarz is saying, as a Roman Catholic: that God through man is working on the creation which is then sacred?

BETTS: Bestows sacredness on it . . . Do you think, Dr. Tillich, that a *rapprochement* is going on that could be seen best of all in architecture?

TILLICH: Yes, and I believe you have the vantage point of the middle in your church.

What happens in a church?

HALVERSON: We talk a great deal about our feeling when we come into church, the kind of emotion we are supposed to have. Fundamentally we must face the fact that church building is designed not as a place where a person comes for a religious experience, although that may happen, but to house a community that is gathered together to do something. A New England meeting house of the 18th century expressed its relation to the community. The contemporary church is too diffused, not clearly enough articulated. I think we can never forget that church buildings are designed primarily not to create a mood but to provide a setting for the church's act of worship.

WEAVER: I don't think modern man has any trouble finding out what to do in

church in connection with such activities as the men's Tuesday night supper. He eats what the church feeds him and if the food is bad you can always call it fellowship. On a list of things that people do within a religious building one is cooking —and I have seen some beautiful kitchens —another is Sunday School. . . .

BELLUSCHI: The fine answer I got one morning was that the kitchen is more important than the altar.

BETTS: What does the church do? Let's try a word on that. Of course it includes the sacraments, which may be two or seven or more that we have not thought of yet. But isn't the chief job of the church to put man's life, from the Christian point of view, in proper frame of reference, whose center of life is in God's presence? Now the whole map of the church program seems to me to be pointed to this great objective.

WEAVER: Do you think it is irrelevant to the Protestant Church that one of the tests of the service, of what goes on in church, is the way I live?

BETTS: Certainly, that is what I mean by putting your life in a proper frame of reference whose center is God, not yourself. That has tremendous ethical consequences. Yet religion is not primarily moralistic. But the problem you are giving voice to is, Can a thinking man simply come to church and worship? He can't; he must go through a long educational process which includes the kitchen, the trustees' meeting, the Sunday School, I hope something else. It makes worship possible as an art.

CHAIRMAN: That is the first time I have heard a sensible explanation of all those institutional features.

Arrangements for worship

CHAIRMAN: In the church room itself, is it not true that the Protestant Church may well put the pulpit at the center, because the Protestant Church is a church of the Word?

TILLICH: Seeing and hearing are the *two* senses that are decisive. To be a church of the Word does not mean to be a church of talk. That is precisely what has happened to Protestantism too often. The Word is also present, according to the classical doctrine, in the Sacrament. It is conveyed not only through human language but through visualities. Without pretending to be an expert I might suggest that today usually the pulpit is in the center and the altar on one side or vice versa; perhaps a combination of the two in the center would be the ideal solution for now. And for Protestantism I like a round church, the people seeing one another.

HALVERSON: Did not classical Protestantism try that solution after the Reformation? The first church in Scotland after the Reformation had the pulpit in the middle with the congregation around the table which stood before the pulpit.

CHAIRMAN: You speak of pulpits and altars. What is the altar in Protestant worship?

BETTS: Dr. Tillich, don't you think the altar is being more and more emphasized in Protestant worship as we recapture some of the things thrown out in the Reformation?

TILLICH: Yes, it is a table.

HALVERSON: Pulpit and table.

TILLICH: In most Protestant churches the Lord's Supper is connected with the act of repentance and the essence of the Protestant concept is that it is not repentance which produces the Divine gift but the Divine gift produces the repentance. The sacrament really has two possible meanings: one is of the community, meaning the table around which we sit together; and the other is that what we eat and drink is sacrifice, that it has some special character which is symbolized in the Body and Blood of Christ, the presence of the Divine. Sometimes in Roman Catholicism the latter side has completely overcome the former. In most Protestant churches the community side is stronger than the other.

CHAIRMAN: Is there any special architectural interpretation of that?

BELLUSCHI: The altar and communion rail tend to be much closer physically to the congregation. The rail can be three-sided. At Alexandria, Va. it is four-sided which means that the minister has to turn his back to a portion of the congregation.

BETTS: Well, which way you face is not vital. But one of the main problems we have in what is known as the liturgical movement is bringing the people back to God in the worship. If the altar is far removed and the people set off, as in contemporary churches falling into the Gothic floor plan, this goes back to the Roman Church which involves so much magic.

The church as ever new creation

CHRIST-JANER: After much travel, looking at churches, may I stress that the Christian Church should reveal above all the mind and the spirit of Jesus Christ . . . He took severe issue with the dead form which encased the thinking of His contemporaries. Indeed Jesus spoke harshly only when He charged men with plodding under the letter when they should take flight with the spirit. No one pours new wine into old wineskins; new wine has to be put into fresh wineskins.

HALVERSON: A professor of architecture once said nonetheless that "Gothic was the only religious style." My reply was: "You are saying that Christianity does not have a relevant word for our society."

WEAVER: May I put a question? Mies van der Rohe designed a new chapel for Illinois Tech. It is meaningful to me as having the style and engineering of every day. Can we all, in an attempt to be honest, take this as a departure and somehow endow it with a new dimension for the church—not rejecting what is in modern life but giving it this new dimension which might be what you called "sacred emptiness"—or does architecture face going into some sharp contrast to daily life in the name of the spirit?

TILLICH: I think our whole discussion clearly says we go the first way, not the second; we use the stylistic powers of our age for church buildings.

The architect's belief

CHAIRMAN: Might not an infidel create a great church?

BETTS: Can't we also say that if he were a practising believing member of the church he would have created better?—But I guess I am limiting God.

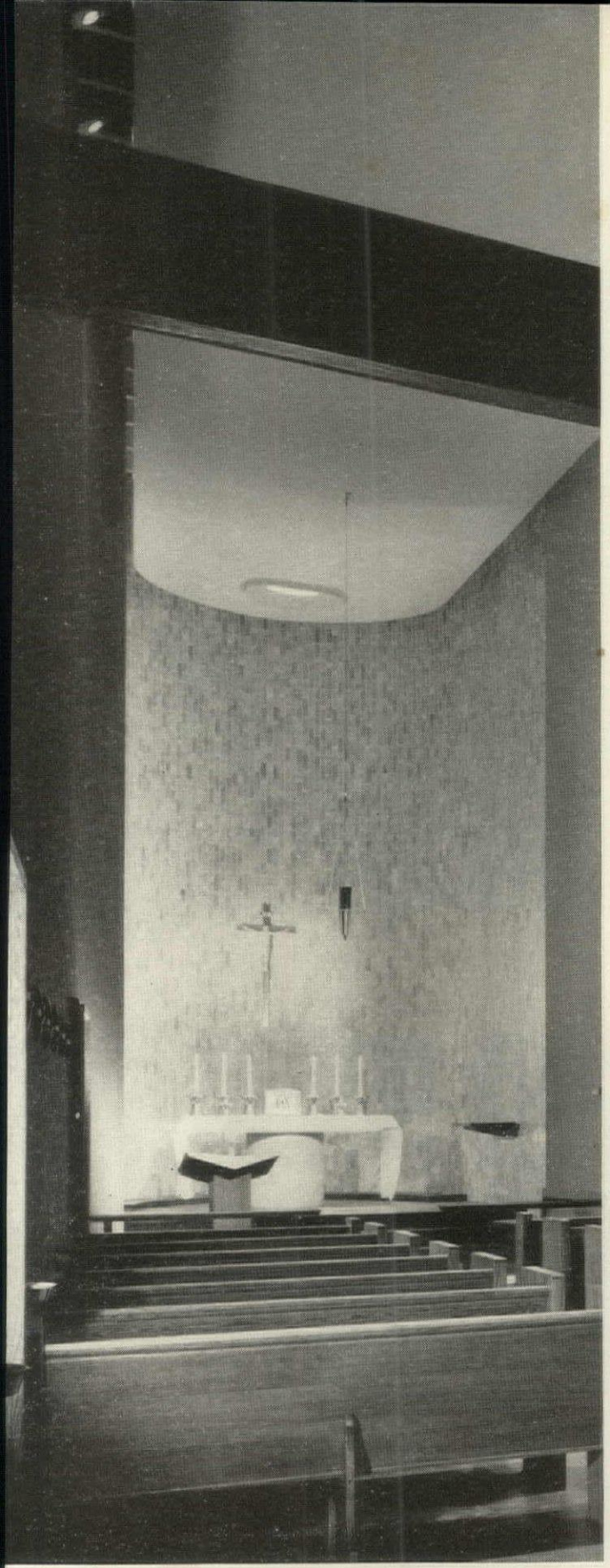
TILLICH: Out of the man's doubt may have come his power. This is often true in theology.

Architect and congregation

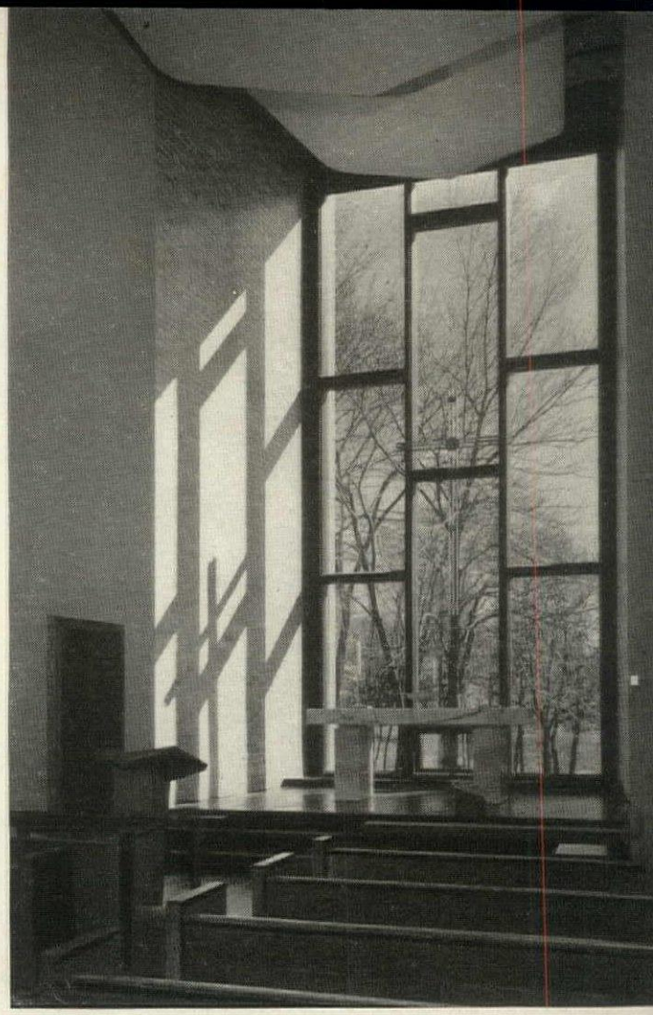
BETTS: To get back to your question, basically where does the architect stand? He stands between cult and community. From his vantage point he, as a good architect, uses his tools honestly in the light of the cults standing in the midst of a contemporary community.

BELLUSCHI: I am troubled by a contradiction. His wisdom is derived from the congregation, but the average taste of an average congregation is bound to limit more than to help the architect's creative efforts. He may easily end in compromise to please an unenlightened average of taste. It takes a great deal of good judgment to know when to add to his wisdom and when to stand pat.

TILLICH: You should receive very little of the taste of the congregation; it is one of the mistakes of Protestantism to give voice to shopworn symbols and ideals which completely fill so many middle-class people in their spiritual life.



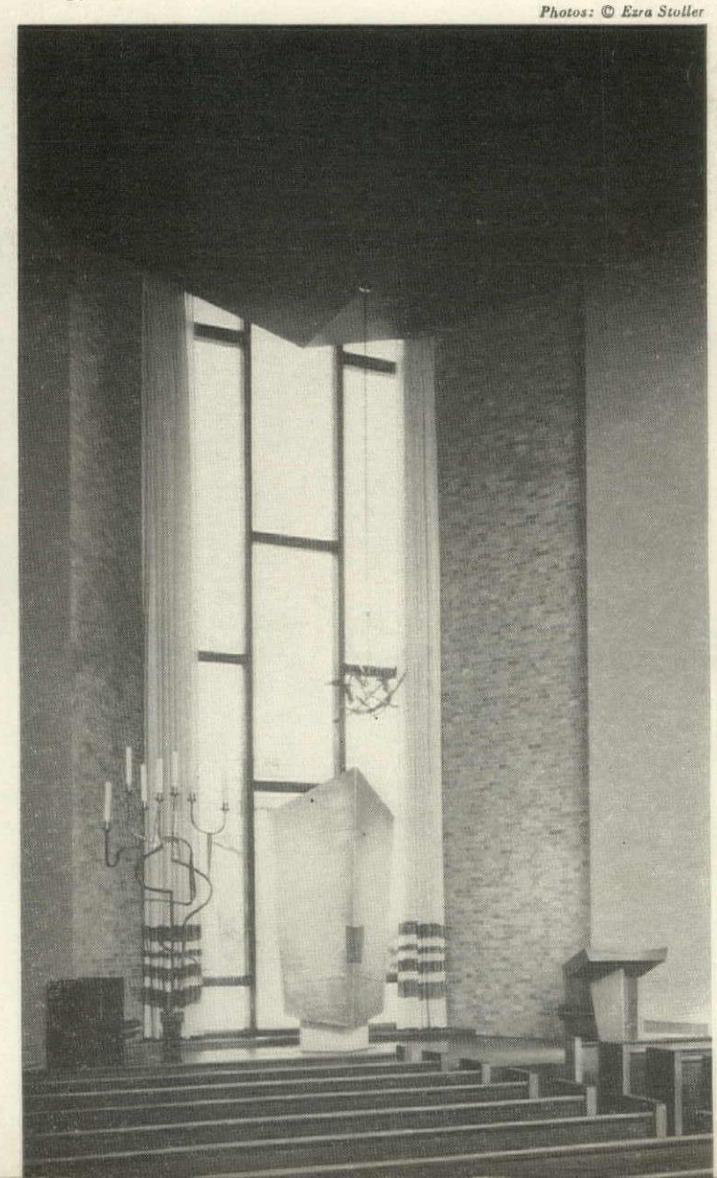
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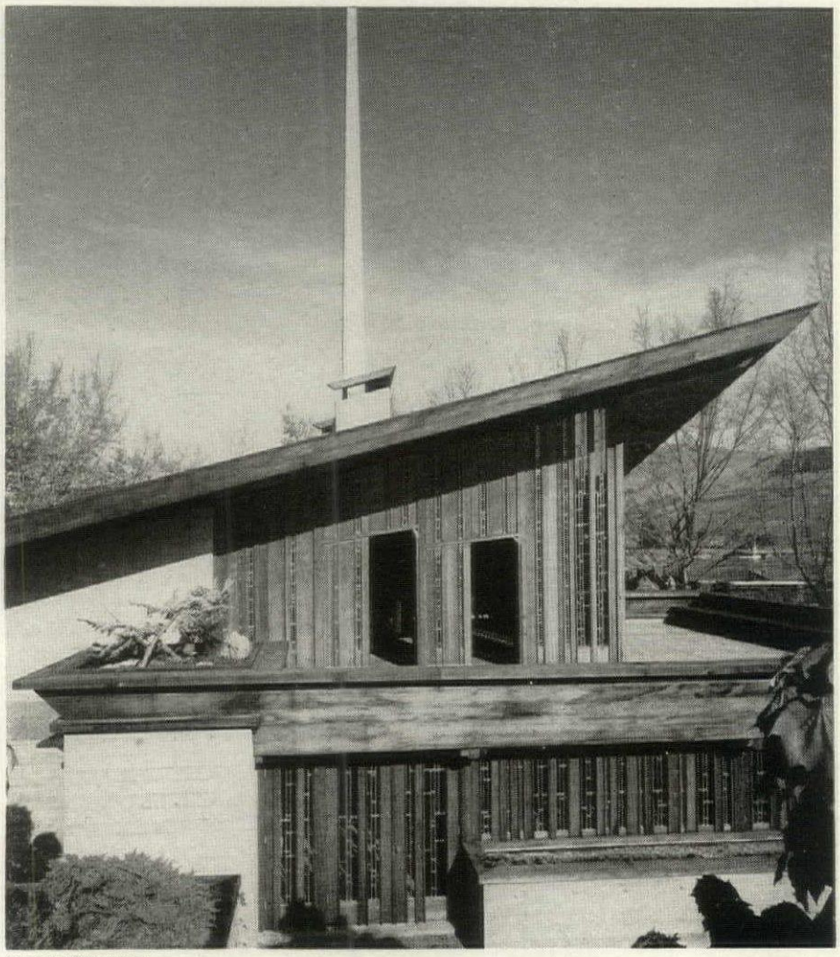
Photos: © Ezra Stoller



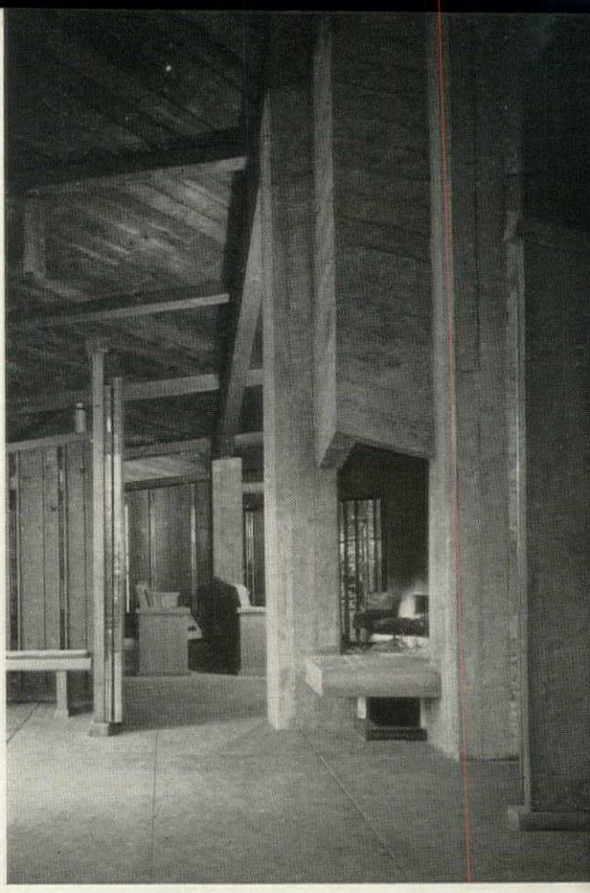
AT THREE ALTARS at Brandeis University, Roman Catholic (1), Protestant (2), Jewish (3), emphasis is different although pulpit is the same. In Roman Catholic church primary emphasis is on altar, God's presence; pulpit is secondary. In Protestant Church altar and pulpit share emphasis; altar is the table at which the people are gathered to make their repentance, be forgiven and inspired, and face one another as a community. In Jewish Temple emphasis is on Ark of Moses, containing the scroll of the law.



SIX NEW CHURCHES



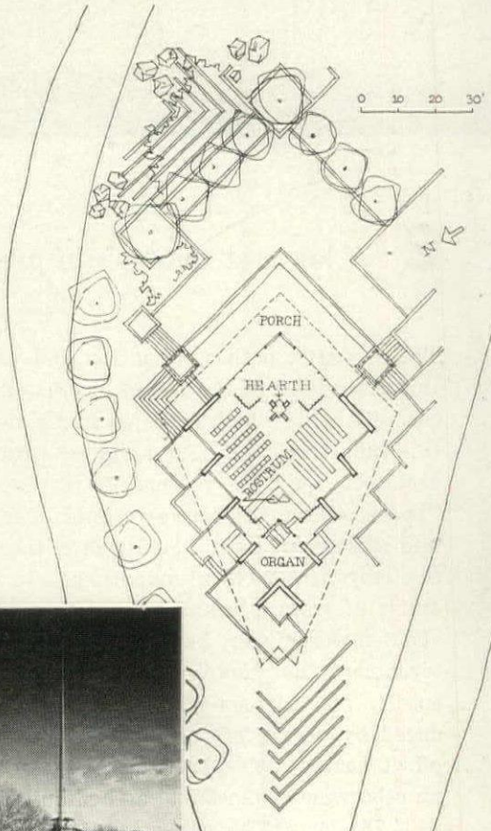
Photos: Morley Baer



Fireplace with raised hearth greets the congregation as they enter church. Flue exhausts at base of steeple.

Raised porch at "prow" of church is used for lectures in good weather.

FIRST CHURCH OF CHRIST SCIENTIST, Belvedere, Calif.
ARCHITECT: Charles Warren Callister
STRUCTURAL ENGINEER: August E. Waegeman
MECHANICAL ENGINEER: Robert Barnecut
GENERAL CONTRACTOR: Elvin C. Stendell



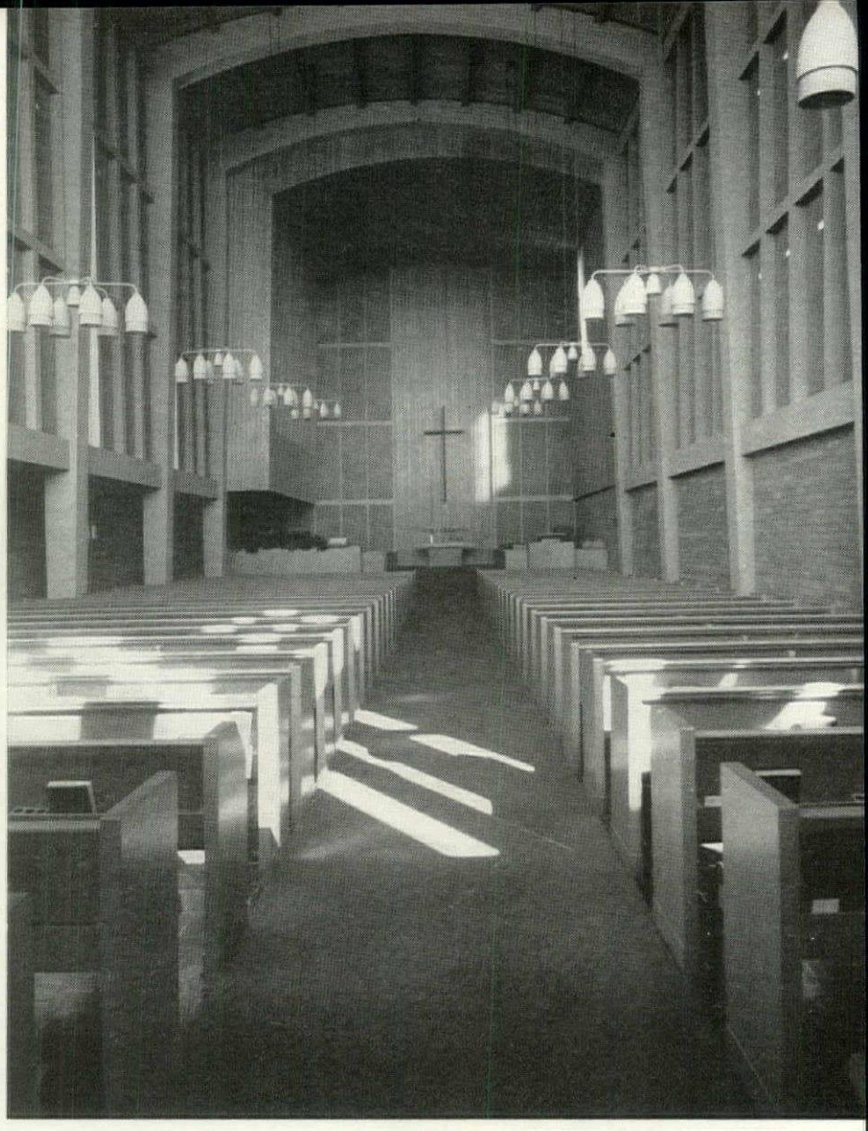


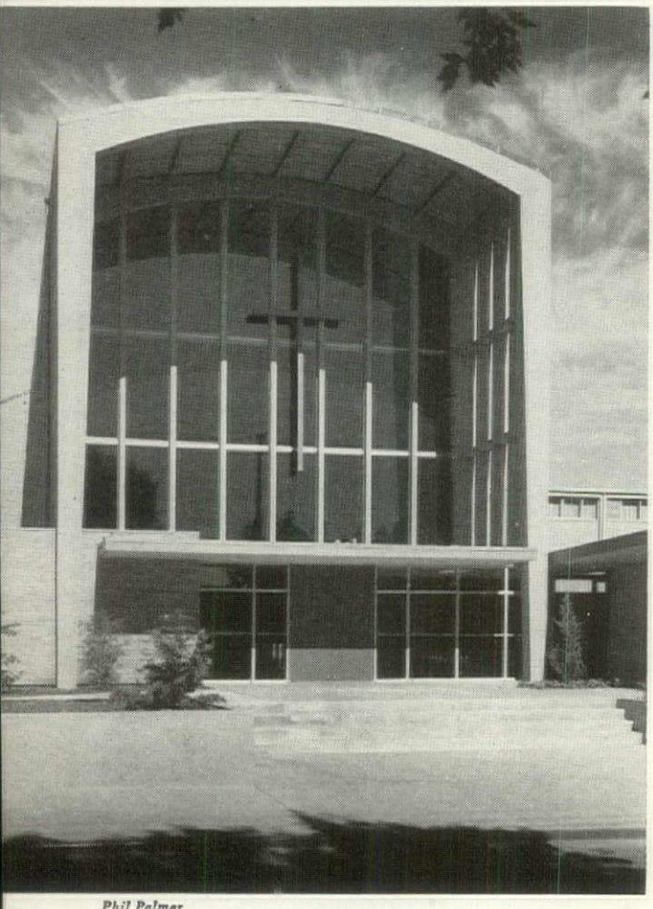
1 A kaleidoscope of red wood and stained glass

In the Church of Christ Scientist, interest is much less centered on a focal point, an altar, than it is diffused throughout the entire space. The ritual is in the congregation; the physical church is background. As a result most such churches are pleasant, airy rooms, but rather bland as architecture.

For the congregation of Belvedere, however, Warren Callister designed a profound structure in concrete and native redwood that is more moving than many ritualistic churches.

In designing it, Callister deliberately intertwined traditions and sentiments: the steeple (a prestressed concrete pinnacle), the hearth, the porch, the shiplike shape, the fishlike structure, the rustic redwood, the stained glass of medieval tradition, and the formal garden all have different historical patterns and significance in religious building. Cost: $50,000, or $16 per sq. ft.

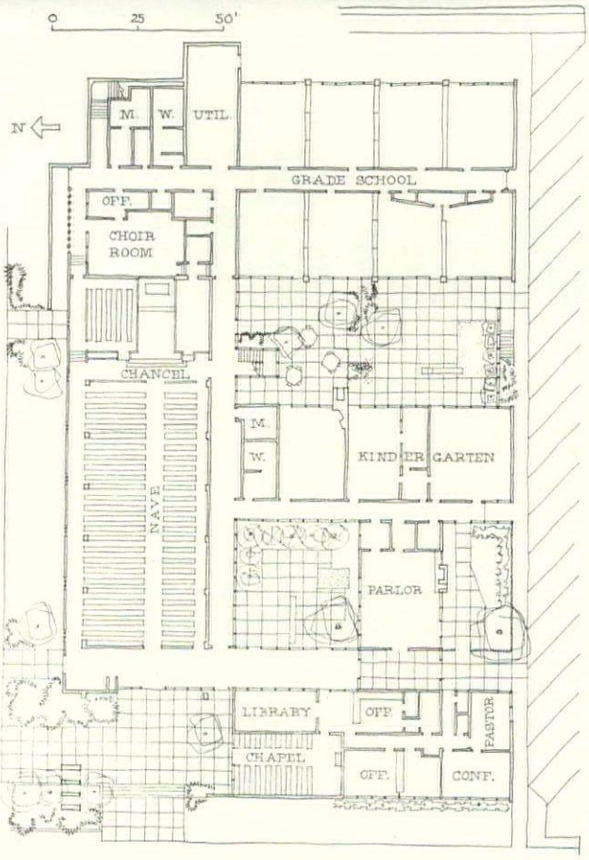




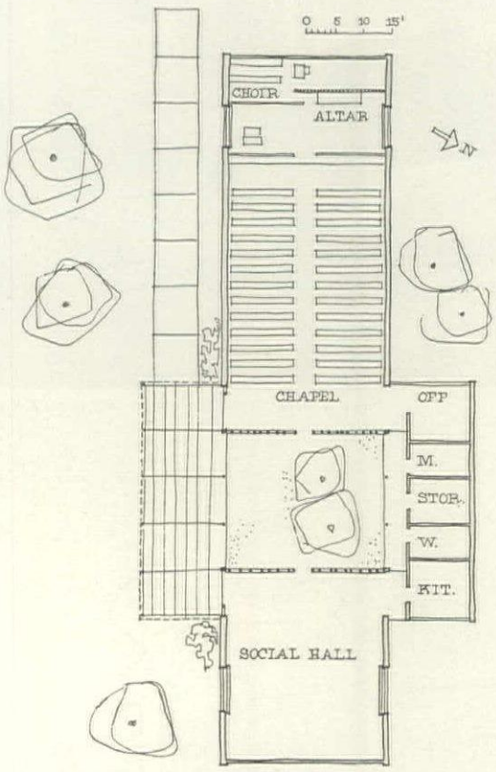
Phil Palmer

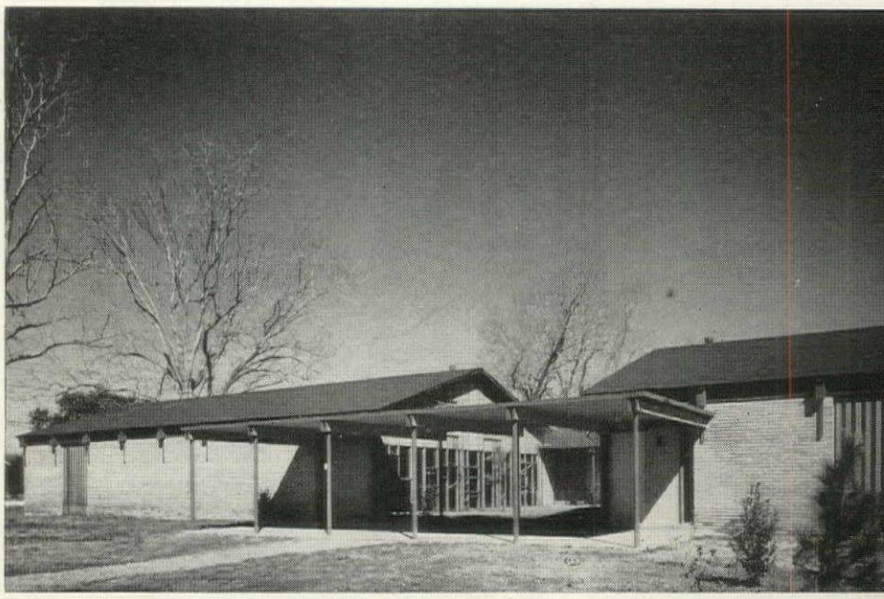
2 A low-cost triumph in precast concrete

The strength, both structurally and visually, of this church is in the set of precast flat-arched concrete bents which make up its frame. Within this industrially efficient building structure, the architect built a powerfully serene church. "Lofty ceilings, upward sweeping lines, subdued and mysterious light . . . for sure, these are not the only architectural implements to induce a spirit of reverence and an envelope of divinity about a worshipper, but for many this is an environment that complements a spiritual experience." The curious offset of the chancel, produced by organ loft at left, is balanced by an offset center aisle—but is still questionable in an otherwise symmetrical arched building. Cost: $404,784, or $12.55 per sq. ft.

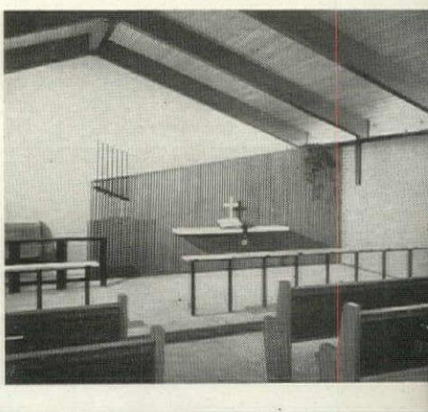


FIRST PRESBYTERIAN CHURCH, Vallejo, Calif.
ARCHITECT: Donald Powers Smith
STRUCTURAL ENGINEER: Isadore Thompson
MECHANICAL & ELECTRICAL ENGINEER: Clyde E. Bentley
GENERAL CONTRACTOR: Nomellini Construction Co.





Courtyard is outdoor room for congregation after service. Design calls for tower to be added to end of church, left.



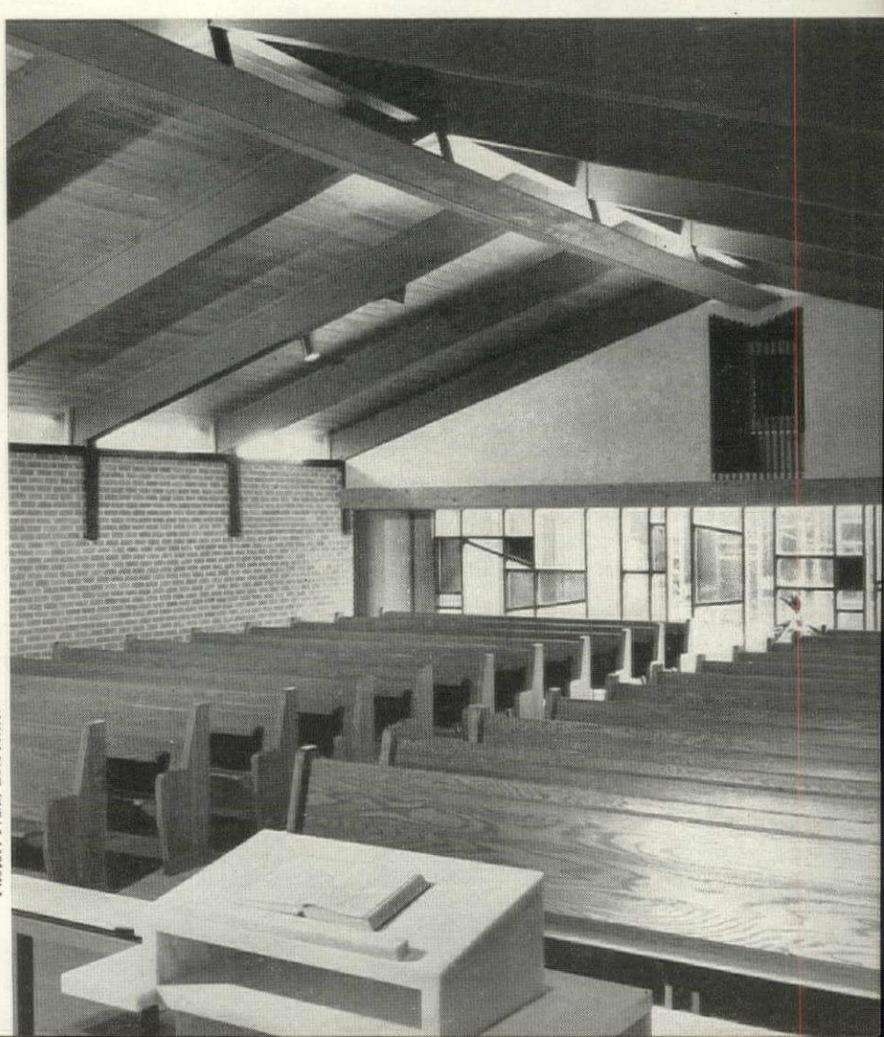
Rear wall of church (below) has wall of abstract design in colored glass under central air-exhaust grille.

ST. BERNARD METHODIST CHURCH, Chaimette, La.
ARCHITECTS: Dinwiddie, Lawrence & Saunders
STRUCTURAL ENGINEER: Walter E. Blessey
GENERAL CONTRACTOR: Richard F. Goodyear

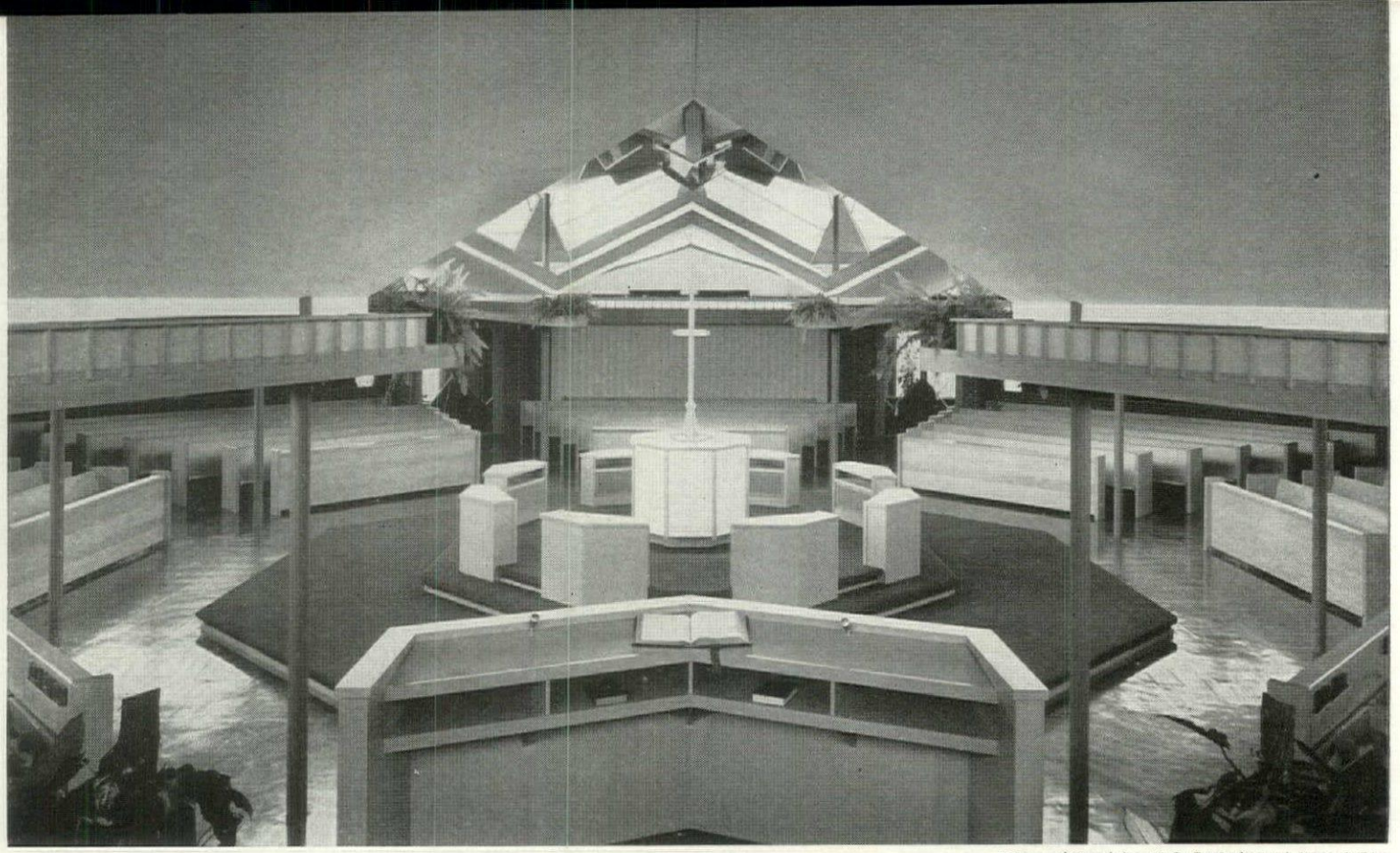
3 A building planned for growth

This folksy Southern church, built to a budget price of under $34,000—a startlingly good value in today's building situation—is designed frankly to be outgrown by its new congregation. Instead of being enlarged when the flock enlarges, this will be made into a children's chapel, and a new structure will house the adult congregation.

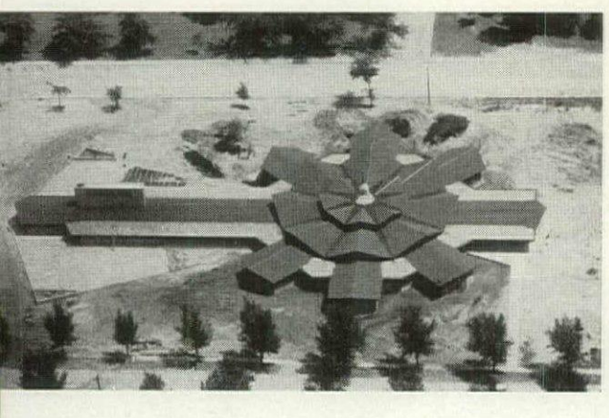
Meanwhile, however, the flock will not suffer. Most of the economies made in this building were compensated for in design: for example, all movable windows were eliminated, but windows probably are not the best way to ventilate a church anyway. The architects instead installed sliding panels over louvers in front and rear walls of the church, giving controlled ventilation. Cost: $8.12 per sq. ft.

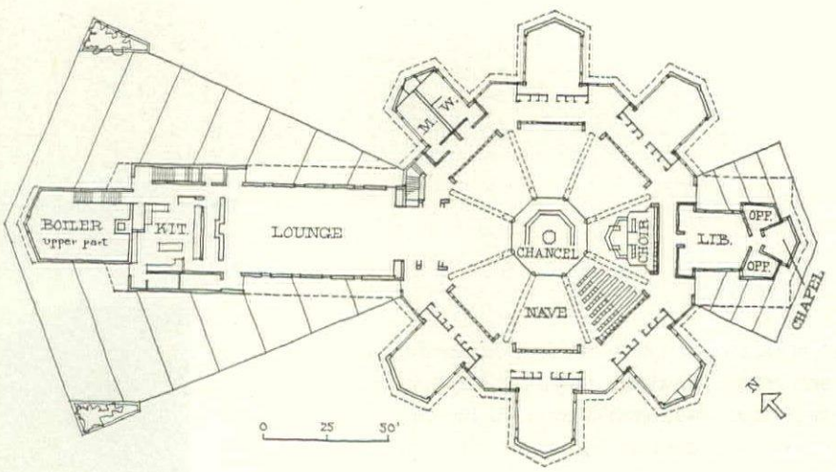


Photos: Frank Lotz Miller



Photos: (above) Gerald G. Gard; (below) James J. Dion





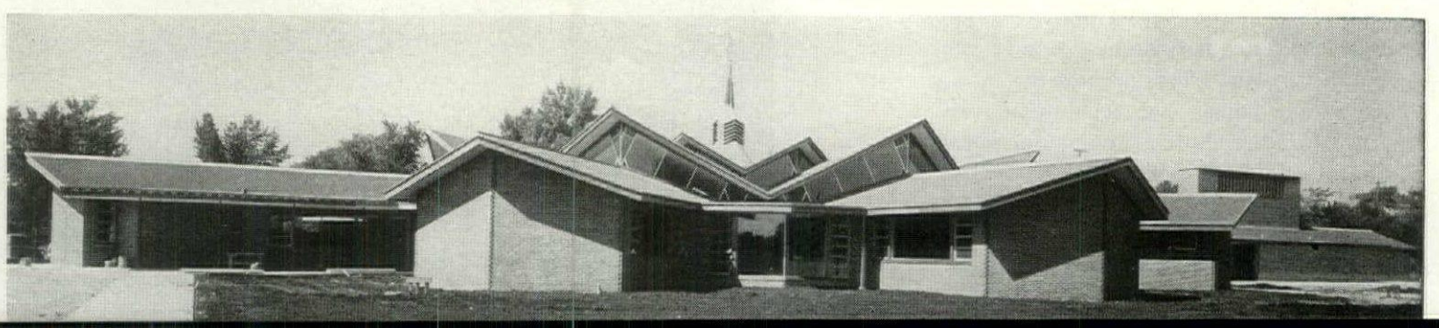
4 A plan shaped like a fortress

Architect Alden Dow says: "Luther instructed his people to 'go out and build fortresses.' . . . I took the point of view that he meant the people themselves should form the fort. This led to the idea of putting the congregation around the symbol of the church, the altar."

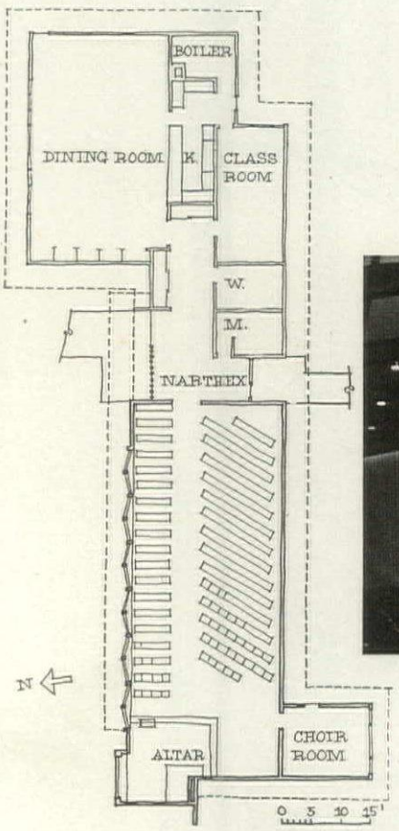
Expressed emphatically and rather strangely in elevations as well as in plan, the octagonal altar of this church radiates eight distinct wings, each with its own roof line, developing in three steps from the center. Two sets of clerestories further express the radiant plan, and flood the altar with daylight.

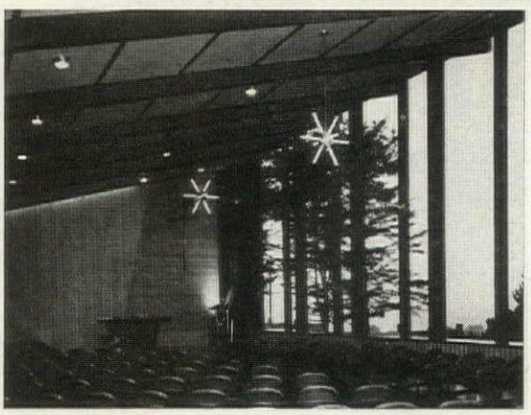
Cost: $533,000, or $25 per sq. ft.

ST. JOHN'S LUTHERAN CHURCH, Midland, Mich.
ARCHITECT: Alden B. Dow
MECHANICAL & STRUCTURAL ENGINEERS: Hyde & Bobbio
GENERAL CONTRACTOR: Charles C. Engelhardt









South wall of church is windowless against rough coastal southwest storms.

North wall, protected from storms and from direct sun, is open. Left, view toward altar.

COMMUNITY CONGREGATIONAL CHURCH, Oceanlake, Ore.
ARCHITECT: Warren Weber

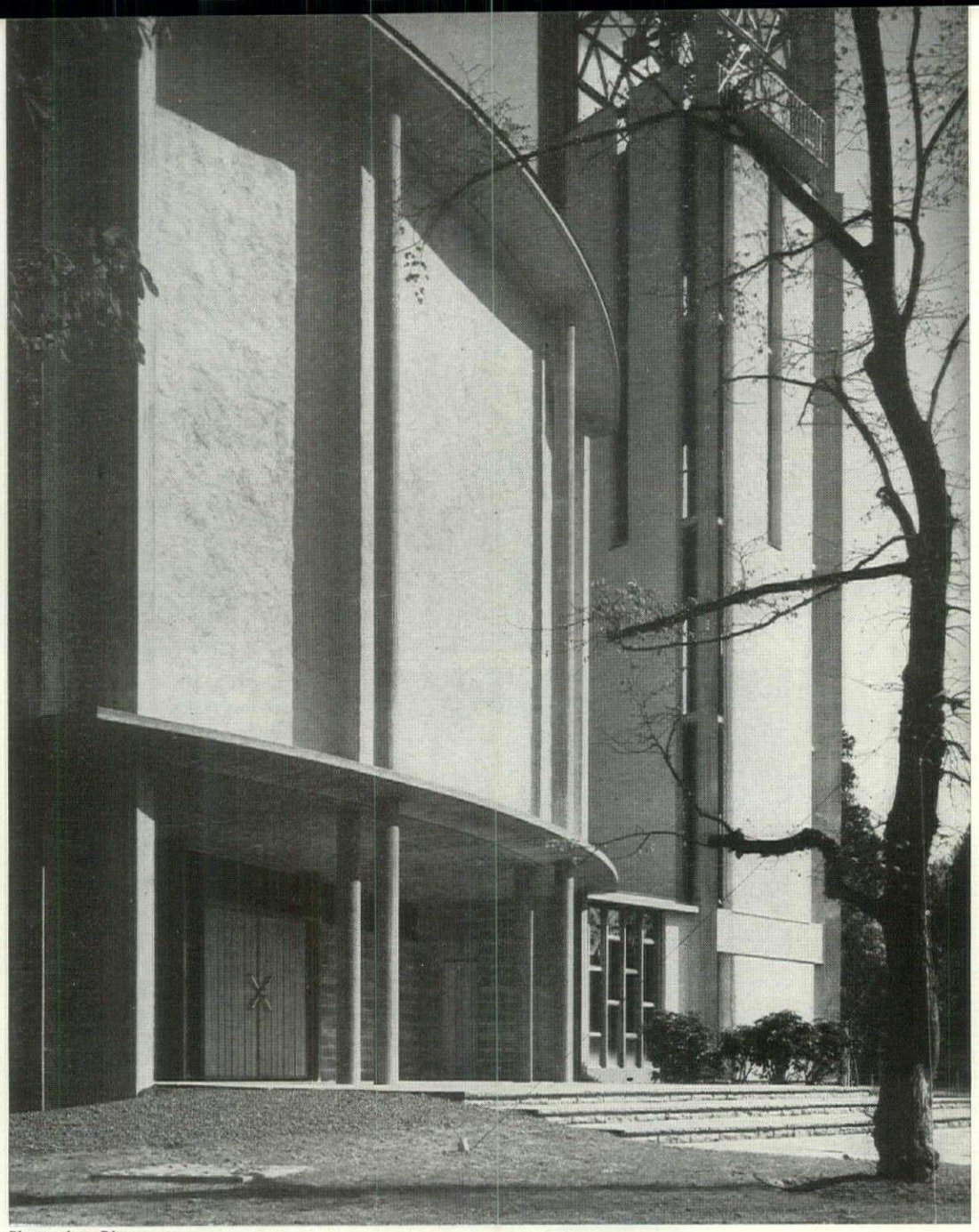
5 A nave focused on the view

Sited over long views to the north and west of the Oregon coastline, this small cedar and glass church takes full advantage of its geography; pews in the nave area are angled so that the congregation can enjoy the scenery through the large clear glass windows without turning their heads. But to keep this outlook ennobling to the sermon rather than distracting, the architect blocked sight lines to the immediate surroundings outdoors.

A tepee tower ends the church. During morning services a warm light shines down on the minister through hammered amber glass in the east face of the tower; at night lights within make the tower a notable landmark on the coastal highway. Cost: $60,000, including some contributed labor, or $15 per sq. ft.



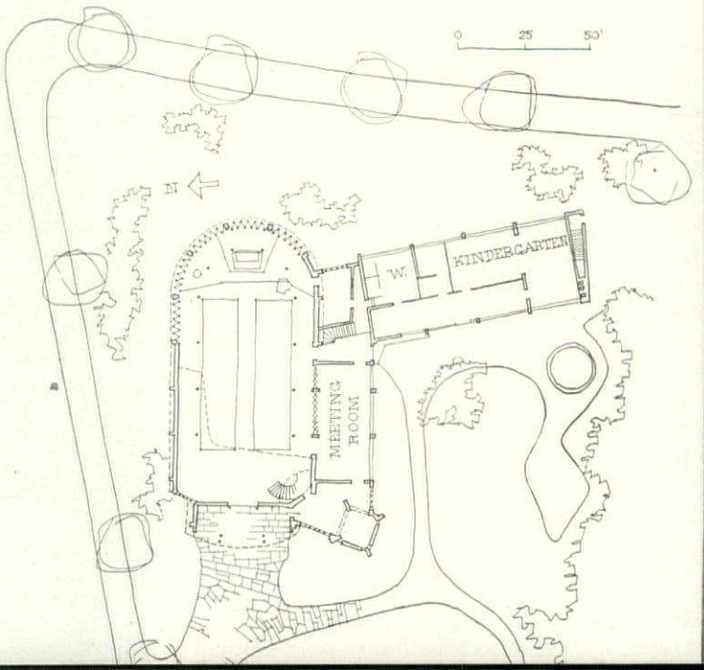
Photos: Northwest Photographic Illustrators



Photos: Artur Pfau

6 A graceful structure of thin, curved concrete

The second reconstruction of this German church in recent centuries, this new building follows an old Gothic tradition of keeping up with the times. Built of reinforced concrete curved in thin planes, its structure is light and graceful; filler panels are colored glass and lightweight brick cavity walls, laid on edge to create a pleasant surface, blunting sound reverberations. Inside, the concrete was left unfinished, showing the wood texture of the formwork in which it was cast; outside, a very thin cover coat of plaster was troweled on. The church complex includes a kindergarten, fenced against the street, a larger room beside the church used for tutoring older children for confirmation, and a campanile. One graceful old tradition is unchanged: the congregation is seated in chairs, not pews.



LUDWIG'S CHURCH
ARCHITECT: Horst Linde
LOCATION: Freiburg, Breisgau



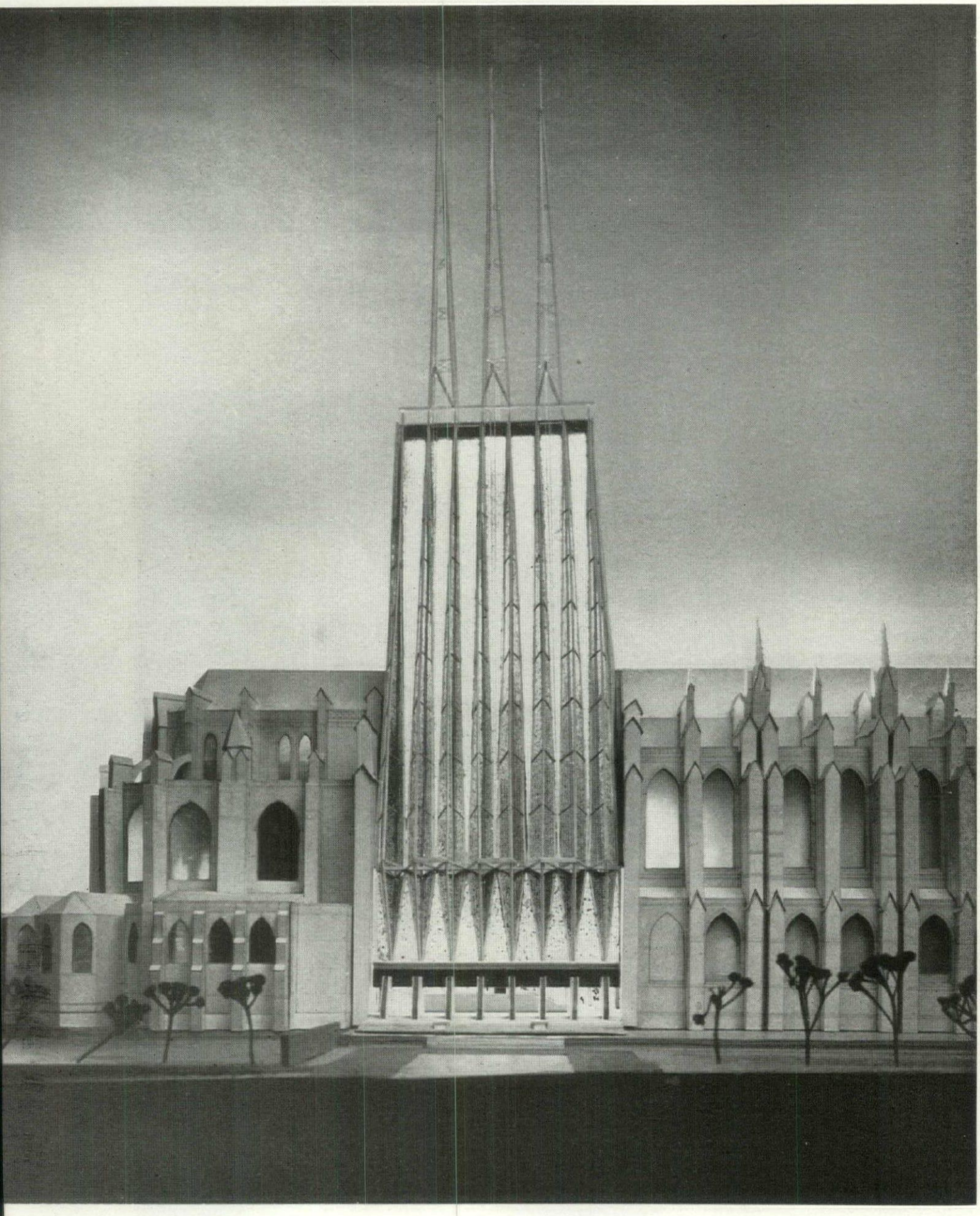
Chancel, viewed from east, is flanked by single-story kindergarten. Interior courtyard elevation is open as this exterior elevation is closed.

Patterned glass of end wall is light in color, mostly yellow. Span across nave is about 35′. Posts as well as arches are reinforced concrete.



Young architects face the challenge of St. John the Divine and show that it can be finished in twentieth-century terms. But building a cathedral was never easy

COMPLETING



A CATHEDRAL–FIRST STEPS

A year ago FORUM proposed that the largest but most unfinished cathedral in the US, New York's St. John the Divine, be completed in the architectural language of today. The prospect of so large and unusual a challenge to today's skill seemed exciting enough for anyone; but most US architects seemed to be less stimulated than stunned.

Dean Belluschi of MIT promptly warned that the job was far more difficult than it seemed; Felix Candela, the Mexican originator of new Gothic-recalling concrete forms, proposed simply that the $20 million spent thus far be summarily written off and the whole structure torn down; others said that the job might as well be finished in Gothic (though the expense, as FORUM had related, would make this an extreme financial sacrifice for an abnegation of creative architecture). It began to look as if a job that architects of previous generations would have jumped to accomplish might go by default through a case of an infectious widespread inertia that looked a good deal like funk.

It was at this point, however, that rescue appeared, as it so often does, from an unexpected source—the younger generation. Dean Belluschi at MIT and Dean Grossi at Pratt Institute, quietly studying the problem, suggested to groups of their students that they make the try.

And with this there began for these students a high adventure that none of them will ever forget.

The MIT group were graduate students, and their first response was cautious. What could this lead to? Why would so unusual a problem not be a mere waste of time? But when visiting critic Minoru Yamasaki appeared to take on guidance for the job, all at once imagination began to take fire.

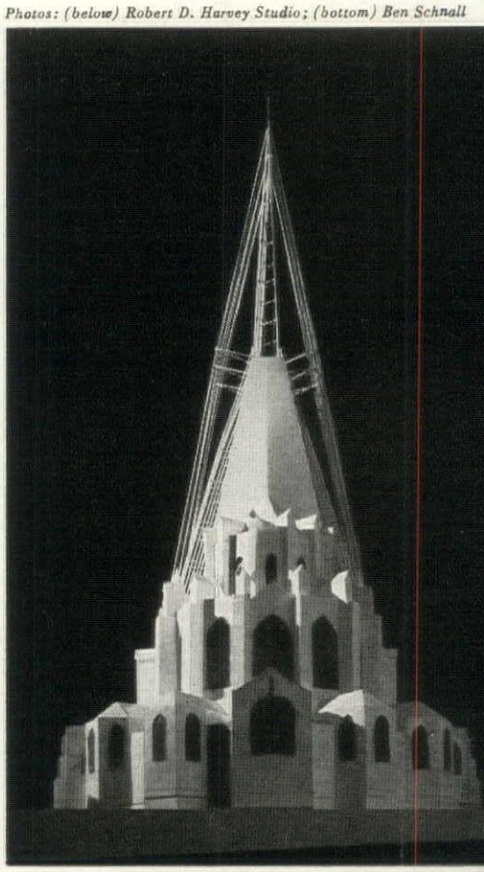
What was dawning gradually on them —as they described their experience later —was that designing a cathedral was an assignment quite unlike any other they had ever tried. To begin with, it was architecture pure and unalloyed, as near as architecture can come to serving not utility but high expression. Lacking were all the usual utilitarian guides—areas required for this or that, lighting or acoustical standards for occupants' tasks, traffic charts and other useful crutches. What had to be achieved was something very big—an appropriate architecture for nothing less than what Dr. Tillich refers to as "man's ultimate concern" (p. 130).

Even the technical problems were not small. This cathedral crossing—to piece in between an existing nave and an existing choir—was not only wide the way a great many modern spans are wide, but high as well, the way today's typical wide spans in factories and airplane hangars are not. Consequently the outer walls would have to be not only vertically imposing but well braced and therefore built out in some depth.

This however was only a beginning; for somehow the crossing must seem appropriate to the fabric as a whole. Baroque architects might often have been called on to complete a Gothic fabric; to modern architects the whole thing was strange. To make such an assignment still more challenging, St. John's is not even a first-rate pseudo-Gothic design; its nave, for example, had somehow achieved no more real architectural scale than a huge barn.

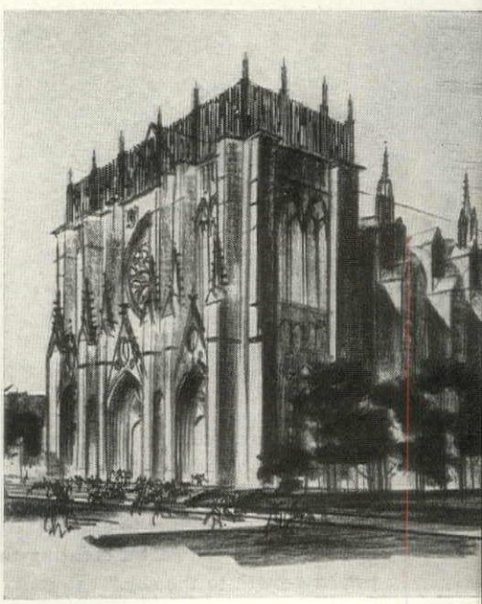
In all they did the young architects were aware that strive as they might for

Photos: (below) Robert D. Harvey Studio; (bottom) Ben Schnall

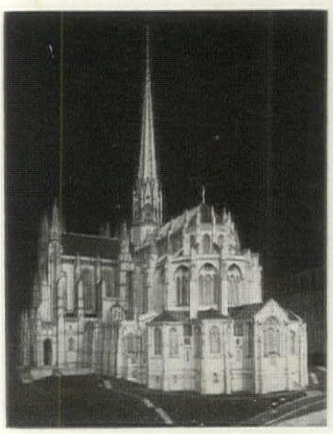


Tentlike tower, proposed by MIT student Manfredi Nicoletti, is shown in elevation above and on facing page. Nicoletti would replace temporary dome with tall, tapered, steel and glass tower.

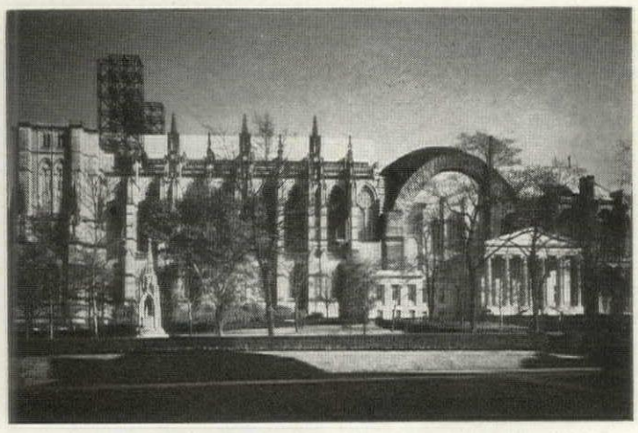
Screens are suggested to top off towers at front of cathedral.



Model for original cathedral



Present stage of completion. Dome is "temporary"

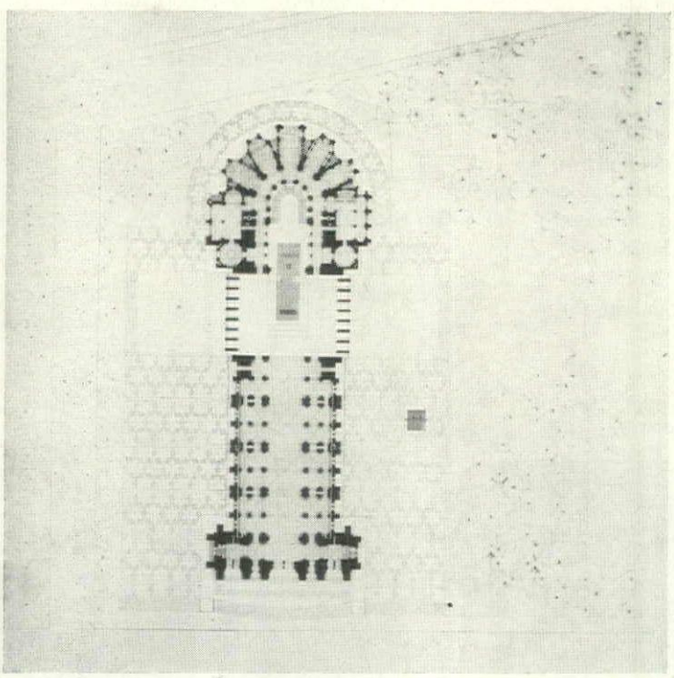


drama—and drama is surely indicated in so highly important an edifice—they must avoid at all costs anything that might look dishonest or shallow, anything done merely as a "stunt."

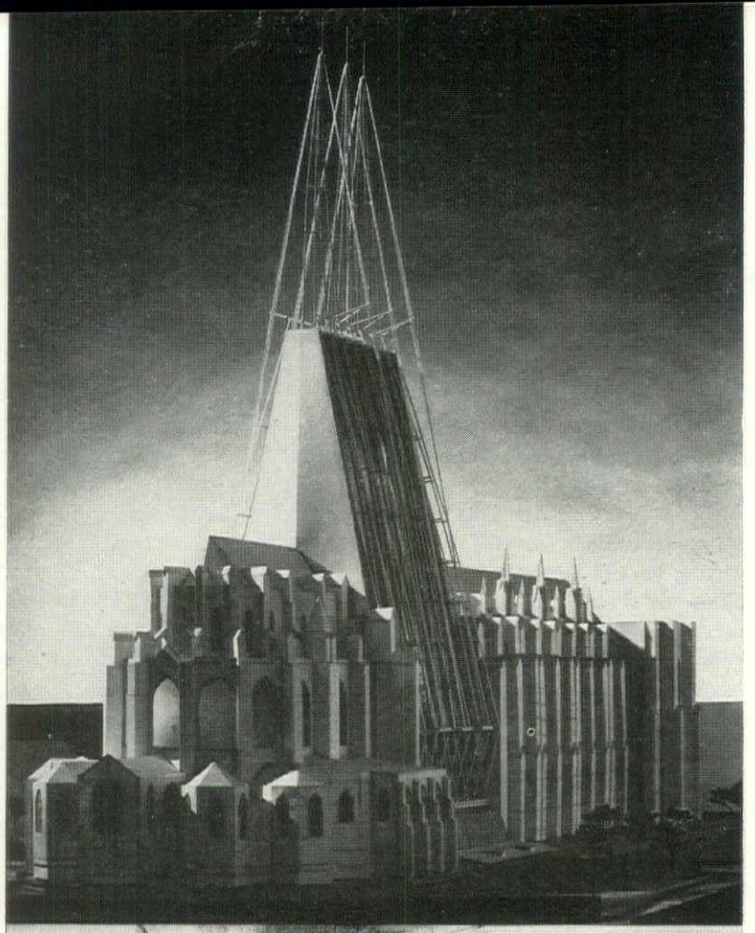
Liturgically the students were aided by the counsel of Canon Darby W. Betts of the Episcopal Church, who helped solve the problem of placing the altar by telling them to restore "an altar that belongs to the people, that is brought down to their midst as it was in ancient times, a people's altar as well as a priest's altar." Result: all altars were brought forward under the crossing. The problem of consanguinity was approached, on the whole, by inserting scrupulously contemporary steel spires among the old. Scale was kept as it was begun by the original architects—big.

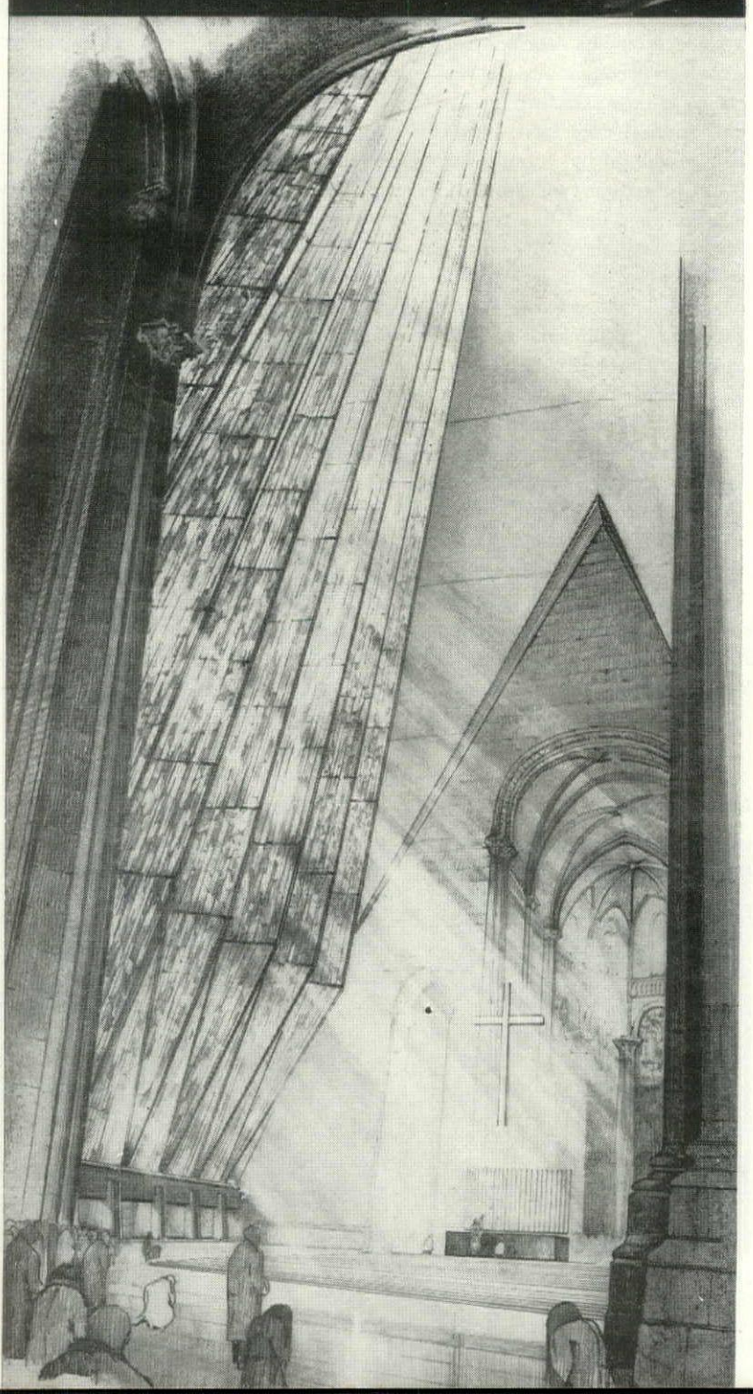
At Pratt Institute the young people who dared the program were not even graduates — they were third-year students, whose enthusiasm went far to make up for wisdom they might lack.

Not one of those who tried believed that his result came anywhere near solving the problem of St. John the Divine. Humble and devoted, they had made what all in all amounted to a quite extraordinary try, something which, with all its faults, had opened to modern architecture a long-forgotten portal to a vista long unseen. Would mature architects now come through?

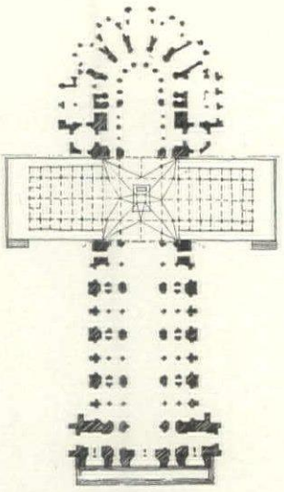


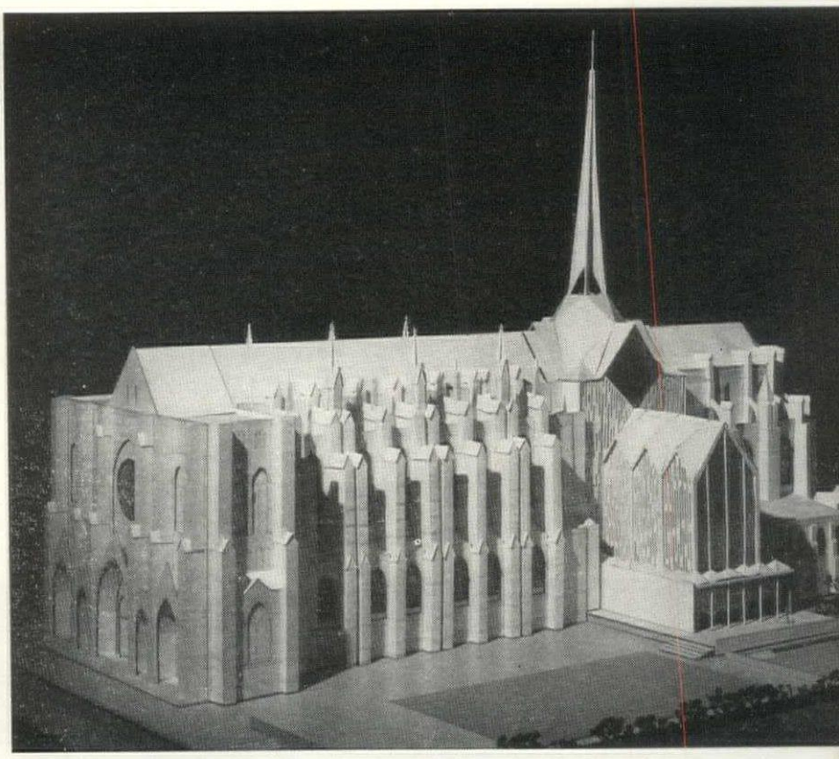
Altar is moved forward in Nicoletti's scheme to occupy center space of what originally was crossing. Transepts are reduced to a widening at base of new tower. Says the designer: "The aim is to erect a structure which springs upwards from the earth, creating the impression of continued growth to the sky."





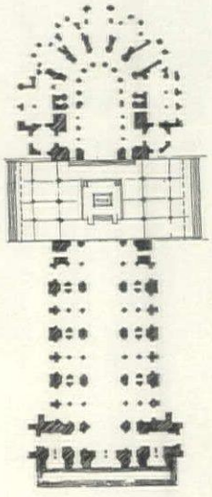
Photos: Robert D. Harvey Studio





MIT PROPOSAL 2

Transept is part of this design by MIT students. Concrete spire dominates the crossing; glass and concrete are combined to shape the rest of the new structure in simplified forms recalling French Gothic spires. In all MIT designs the present high roof line over the nave was continued through the length of the church. Students collaborating: Kenneth G. Terriss, R. Douglas Gillmor, John K. Weaver, Robert S. Allan, Frederick A. Stahl.



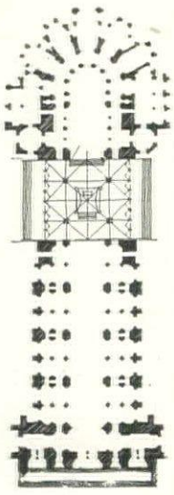


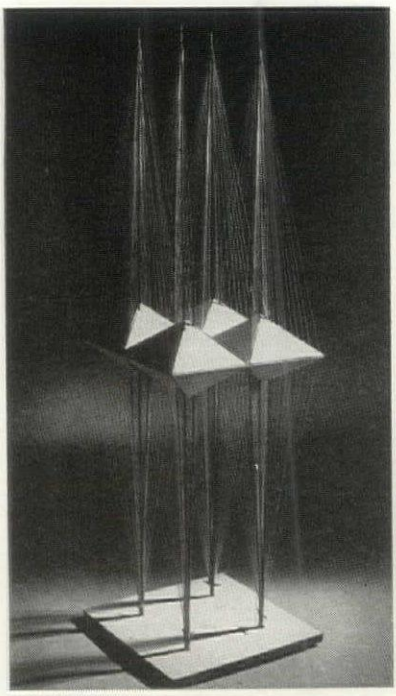
MIT PROPOSAL 3

Nave rhythm was continued through the transepts with concrete skeleton structure instead of being deliberately interrupted as in other schemes. A translucent trapezoidal roof over altar at base of spire would provide a spacial climax and downlighting for altar. Students collaborating on this scheme: Dan R. Stewart, Richard W. Homer, Venkateawara Sundareswararan, Benjamin H. Biderman, Robert T. Coles, Paul S. Shimamoto.

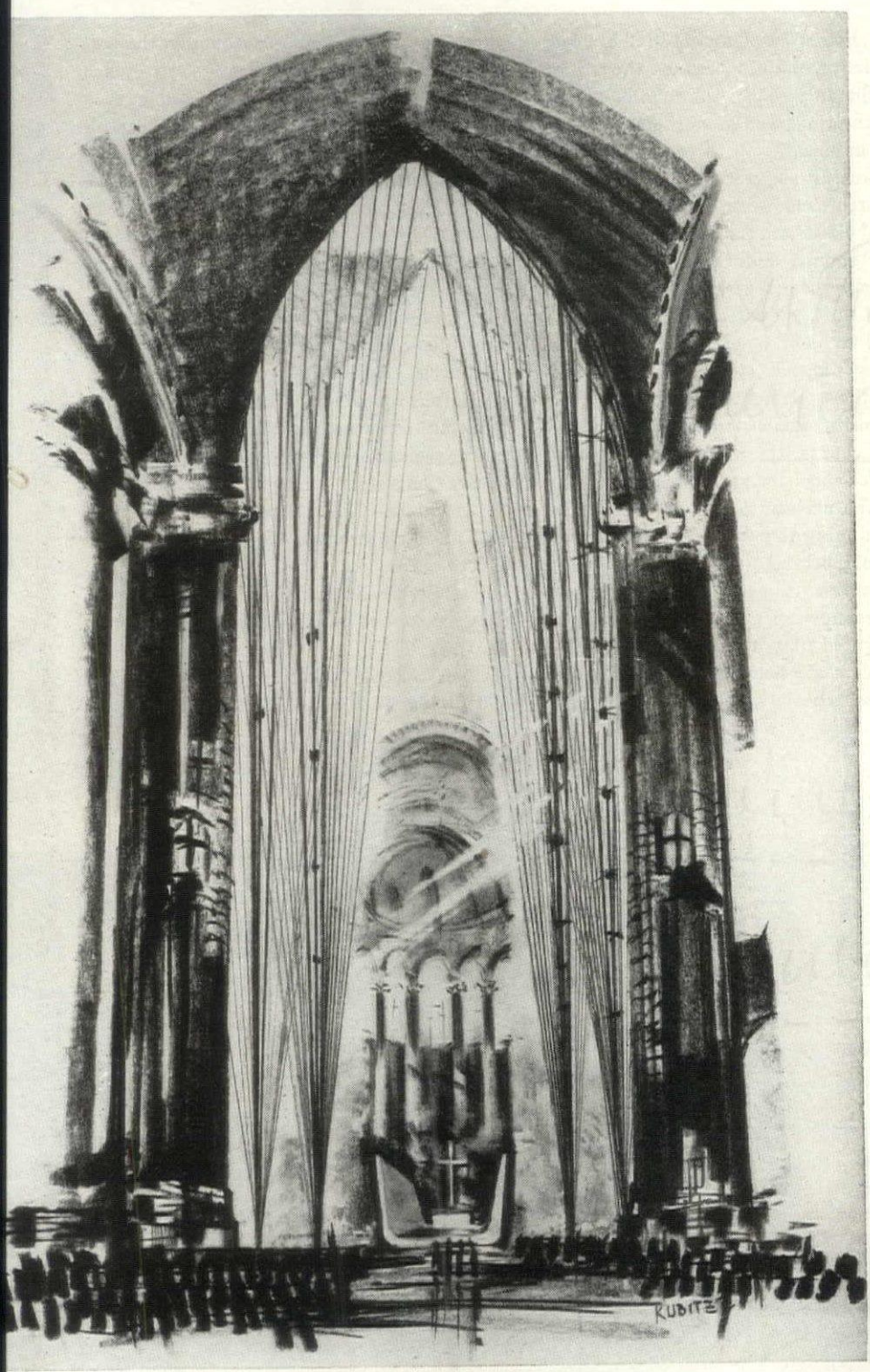
MIT PROPOSAL 4

Four spires, intended to give vertical movement to the St. John crossing, are held on antennalike steel verticals by diamond-shaped "spreaders" as seen in the separate model of this structure (opp. p.). This was then set down into a tower, so to speak, and windows ingeniously introduced between diamond-shaped spreaders and top of the tower (see big model below). These give a high-up light effect as sketched in the interior view (opp. p.), cables catching sun. Least successful aspect: the forced-looking combination of antennae and tower. Authors: Hans Busso von Busse, Frederick Kubitz, Wm. B. Hayward.





Lens Art Photo



In an intelligent use of standardization identical classrooms, construction and materials are put together differently to form a cross plan, a variant of the campus plan and an old school addition

S FROM ONE MIX

examined their work. They chose Sherwood, Mills & Smith, mainly because they liked so much the only school the firm had completed at the time, and gave them all three jobs to do at once.

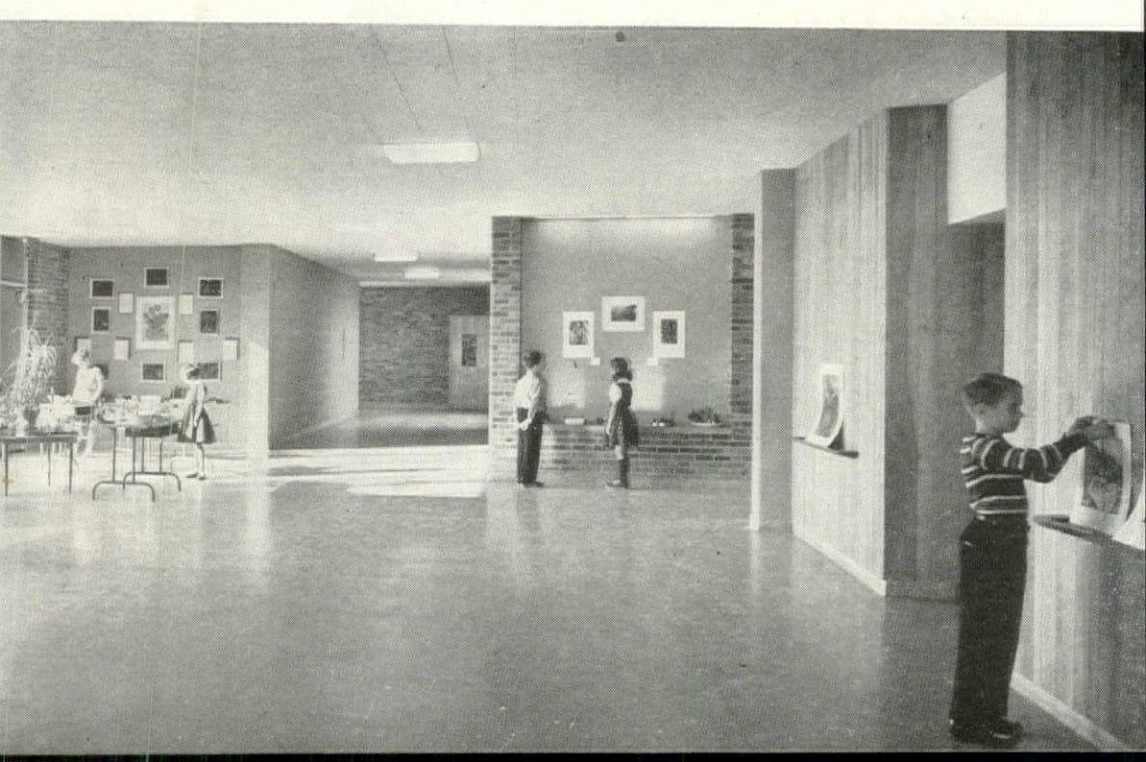
Incorporating suggestions by the teachers, the architects worked out a standard top-lighted classroom for double-loaded corridor, a standard auditorium, a standard cafeteria-playroom, a standard window and panel wall unit, proportioned to be adaptable to all areas of fenestration.

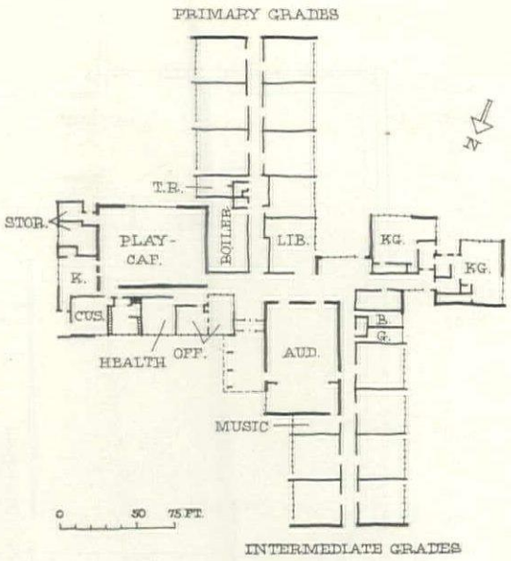
But they did not standardize the way they put these elements together, as the plans opposite demonstrate. In every respect that counts, the school district got a tailor-made school for each site.

Where the architects had greatest freedom for planning (a gently sloping 12 acres from an old estate), they chose a cross scheme because it permits expansion of each classroom wing, gives unblocked views and segregated play areas, and is economical for warm air heating and ventilating runs. These schools have no startling innovations; but they are soundly thought through in details, are very good to teach in, according to the teachers, and have a pervading air of quality and of cheerfulness—much of this contributed by the children's work which is everywhere visible, inside classrooms and out.

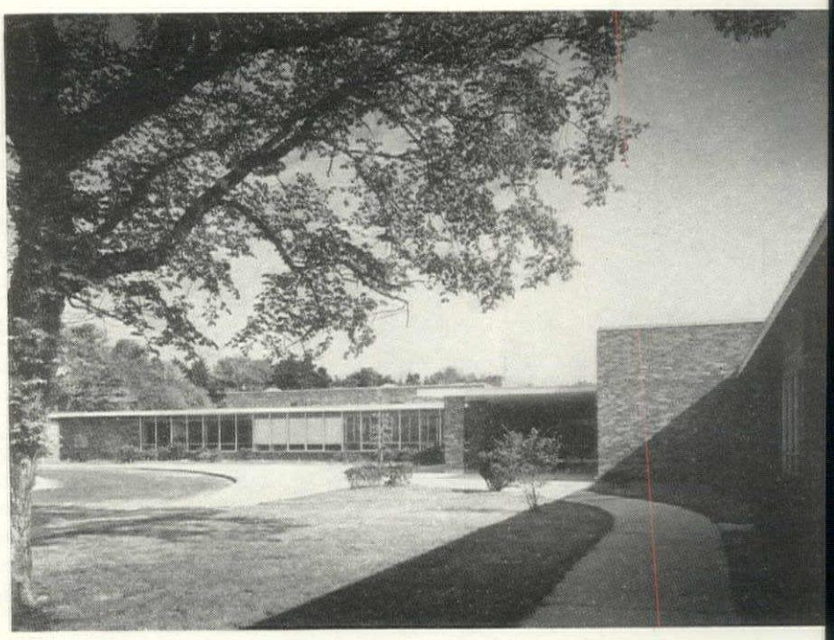
Wall and window frames extend from floor to roof, eliminating the expense of heavy lintels over windows or the thickness of a masonry wall below. Nonglass areas are filled with bright porcelain enamel spandrels. (Brick where used was thus kept to simple square panels.) The roof is insulating concrete on bar joists in most cases; welded steel bents were used in playrooms, long span joists in auditoriums.

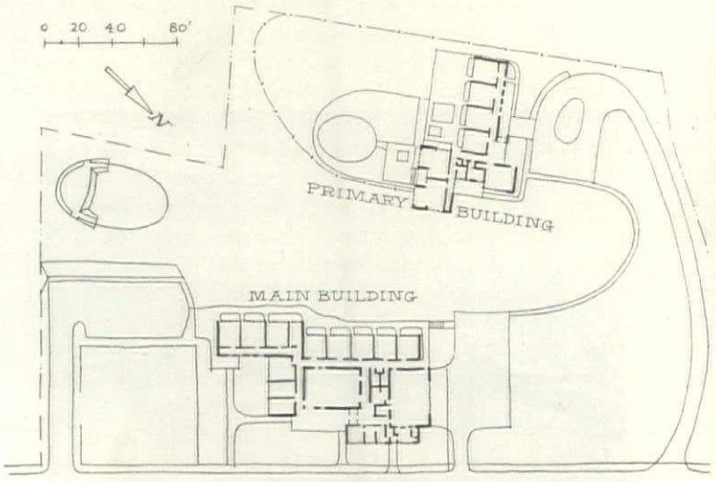
Cost data—King Street School (cross plan): 16 classrooms, 490 pupils, $632,000, $15.13 per sq. ft.
Olivia Street School (two unit plan): 17 classrooms, 490 pupils, $838,000, $15.64 per sq. ft.
Horton School (addition): 5 classrooms, 160 pupils, $337,000, $18.78 per sq. ft.





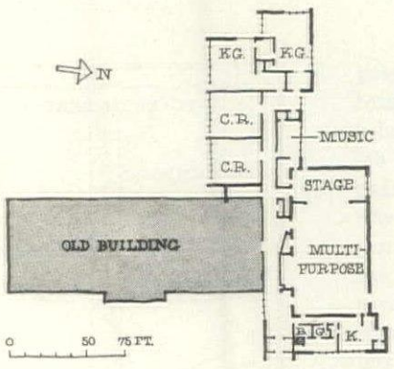
Cross plan: King Street School



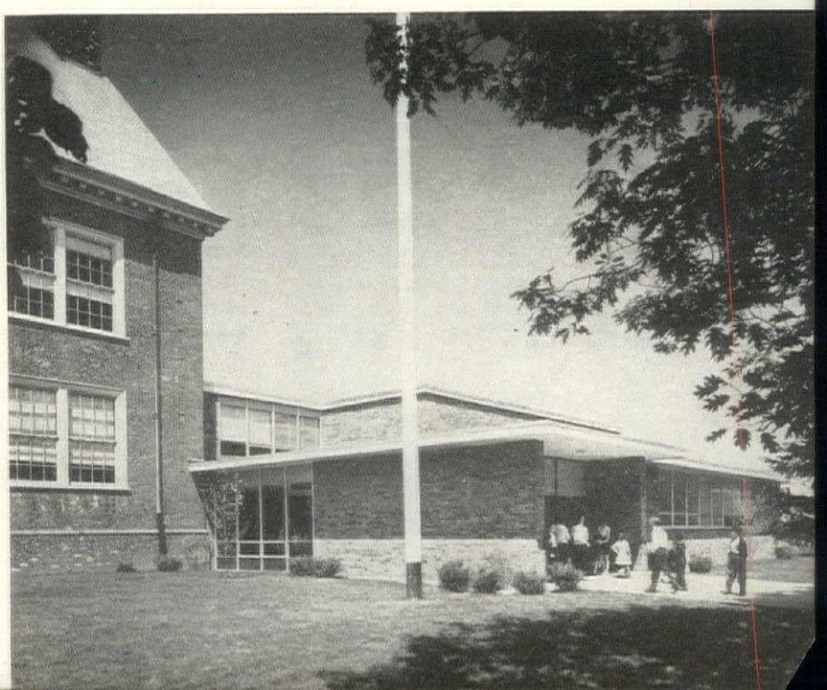


Two-unit plan: Olivia Street School

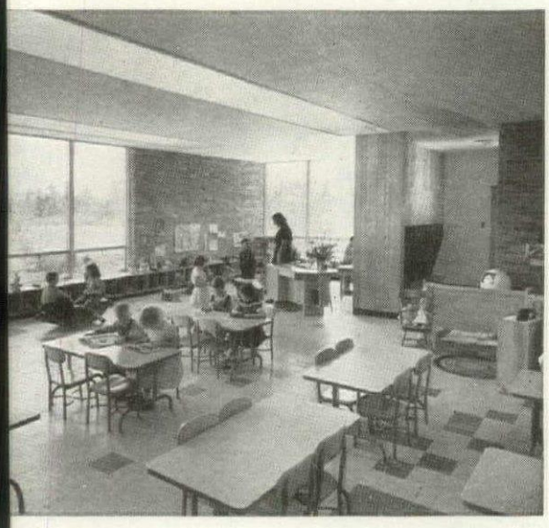




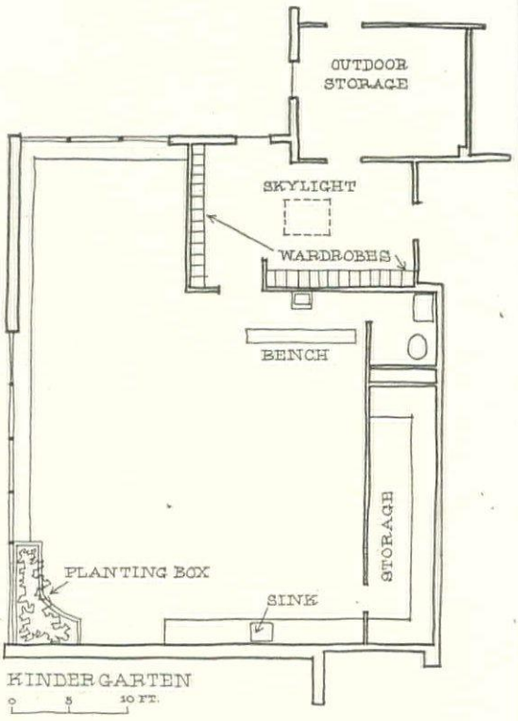
Addition to old building: Horton School

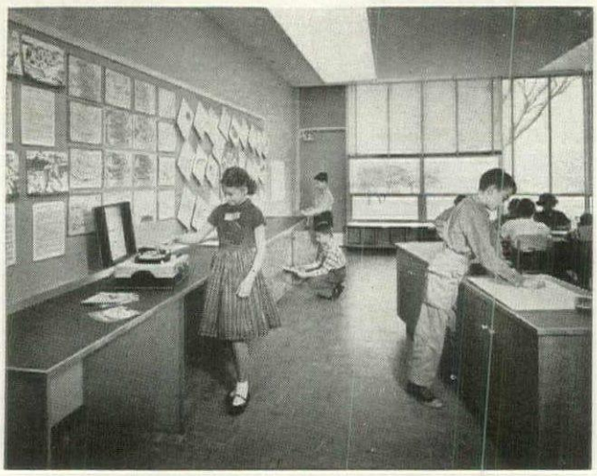


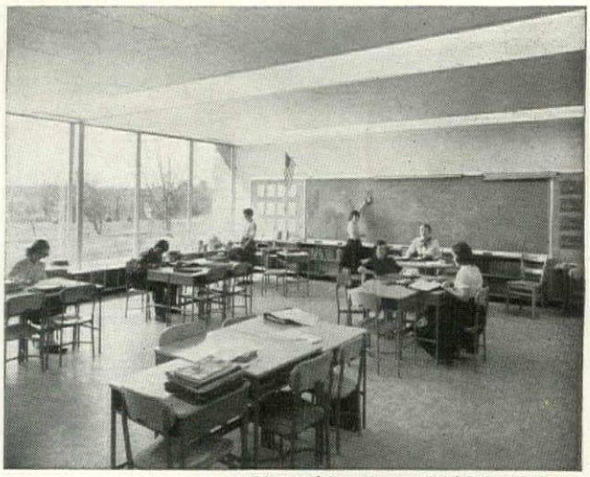
Kindergartens have a place for everything



They even have a place for a patch of outdoors in the greenhouselike planting corner (see plan). Adjoining the wardrobes is an ample storage room for outdoor toys (shared by pair of kindergartens). Work counters in the kindergartens have movable cabinets beneath as in the classrooms (below), and teachers are enthusiastic about the resulting doubling of work space. They are also happy with the room-darkening arrangements: chain-controlled louvers under the skylight domes, Venetian blinds at the windows. Virtually all interior wall surfaces in the school are brick, wood cabinet, or tack or chalkboard. Double loaded corridors throughout the schools are made unusually attractive and cheerful by children's decorations on tackboard panels.





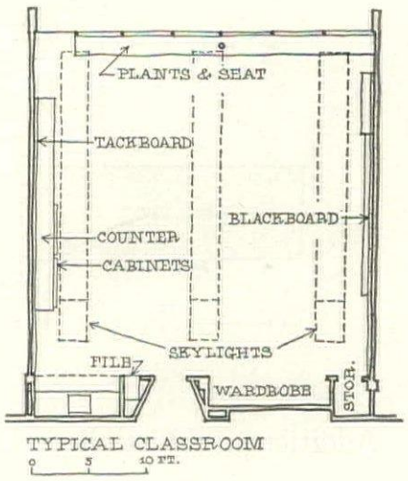


Photos: (above & upper left) Robert Stahman; (others): Joseph W. Molitor

Classrooms get maximum out of walls and ceiling



Wall space is too valuable for teaching aids to be frittered away in complicated bilateral lighting, the architects concluded after hearing the teachers' report on desirable classroom facilities. Instead they got excellent over-all natural lighting with plastic domes near the inside wall. Fluorescent fixtures (seldom needed by day) are in furred ceiling space; plastic strips cover fixtures and louvered dome openings. Cheapest industrial fixtures were used, and cost of orderly looking scheme was a little lower than conventional fluorescent classroom lighting. Among carefully worked out classroom details, note especially the wide shelf-bench at window, and counter-topped cabinets that slide from under counter.



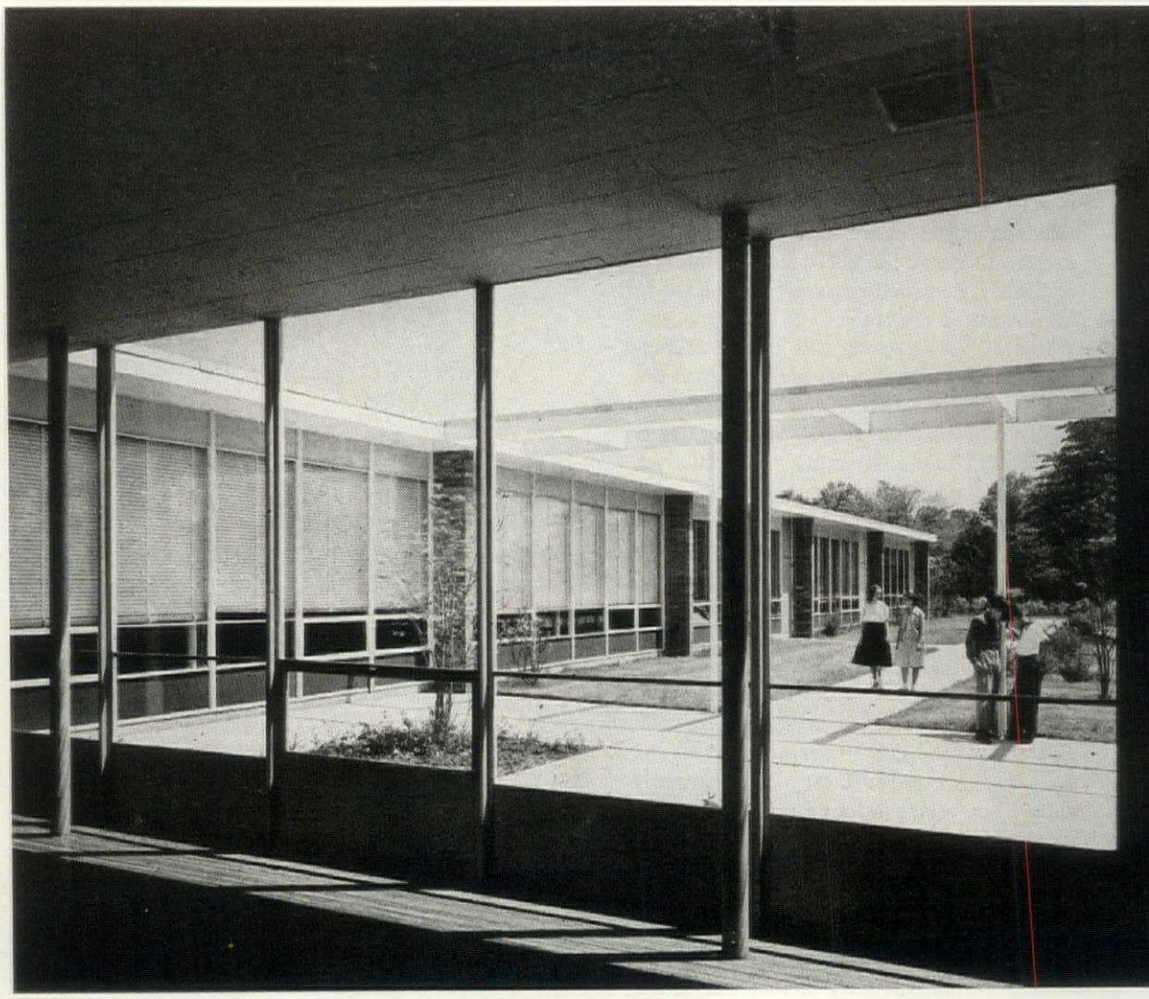
ARCHITECTS:
Sherwood, Mills & Smith

STRUCTURAL ENGINEERS:
Fraioli, Blum & Yesselman

MECHANICAL & ELEC. ENGINEER:
Bernard F. Greene

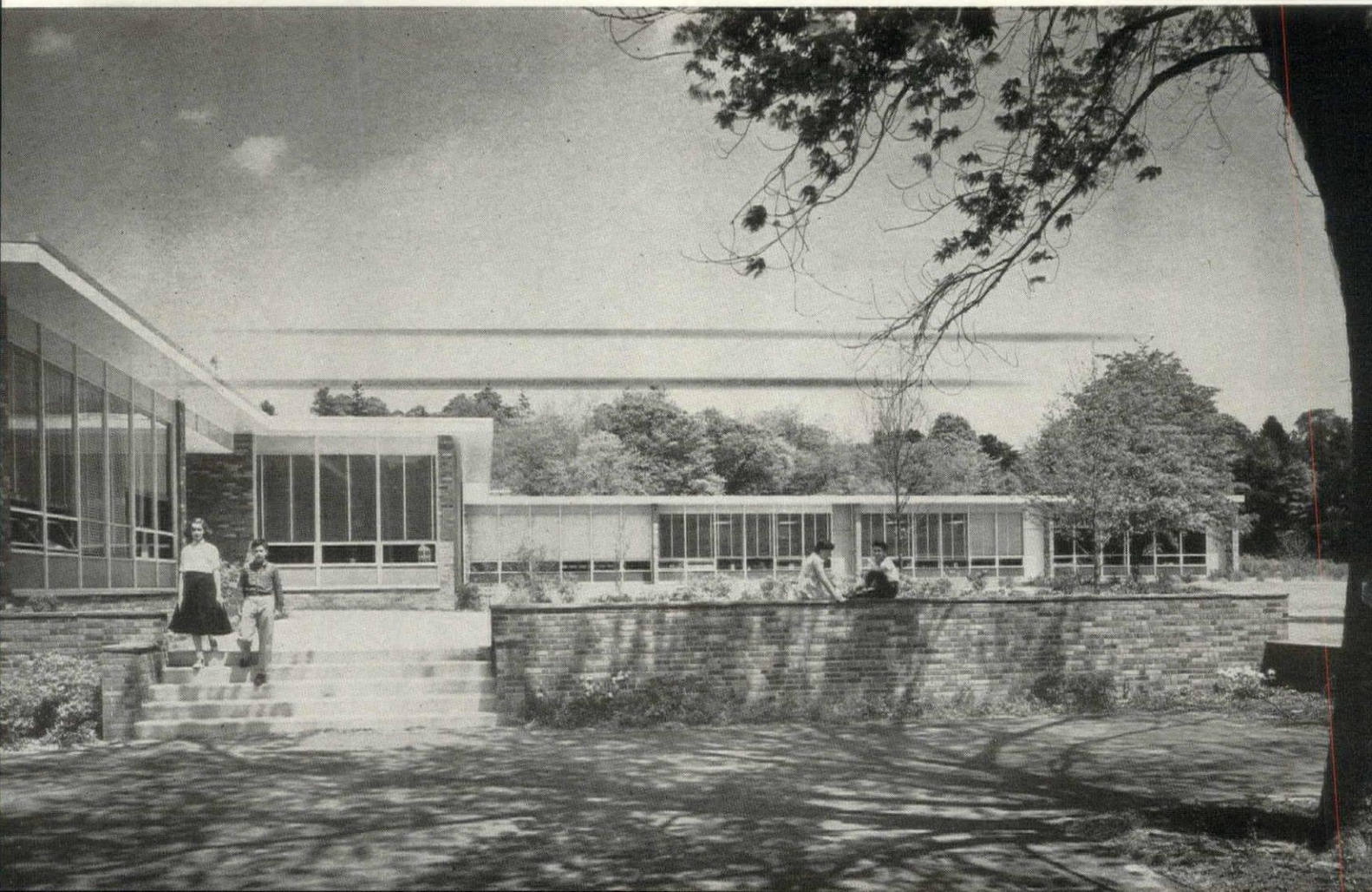
LANDSCAPE ARCHITECT:
Bryan J. Lynch

GENERAL CONTRACTORS:
James Romeo & Assoc.
(Olivia and Horton)
A. Barbaresi & Son
(King Street)



Auditorium lobby at King Street School opens into garden. This is nice switch from usual focus of lobby toward main entrance. Another "community use" amenity: locked cabinets off lobby for PTA, Scouts.

Outdoor areas are segregated by age groups but are sweeping and open, calculated for play, not outdoor classes. View below is kindergarten terrace at sloping King Street site.

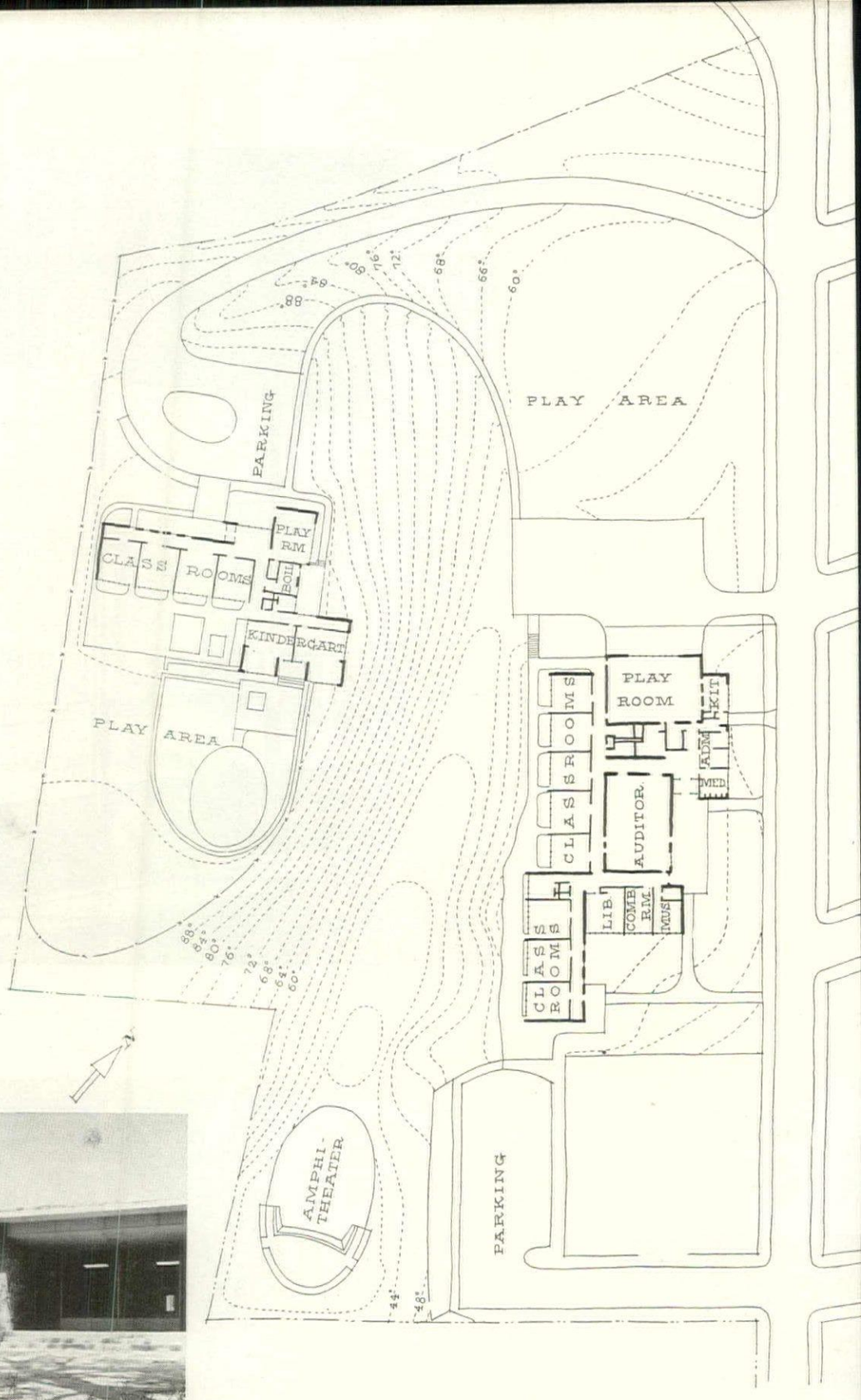


The ravine and the snub

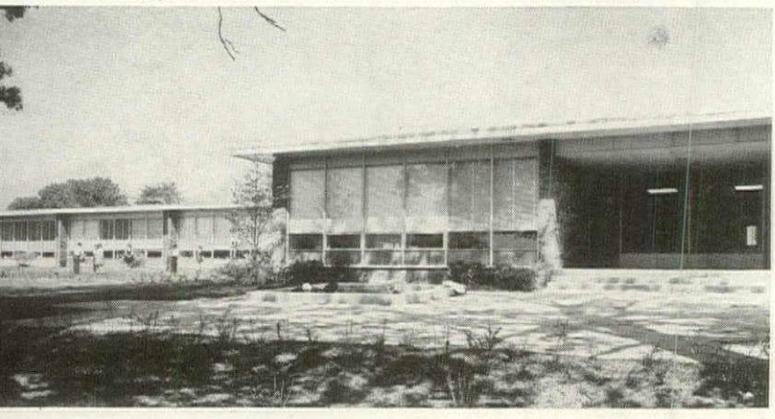
The accepted notion of a proper schoolyard is very tame, with outcrops blasted, gullies filled, paving and lawns laid. When a school architect says he preserved natural interest or beauty, he usually means he managed to keep some of the trees.

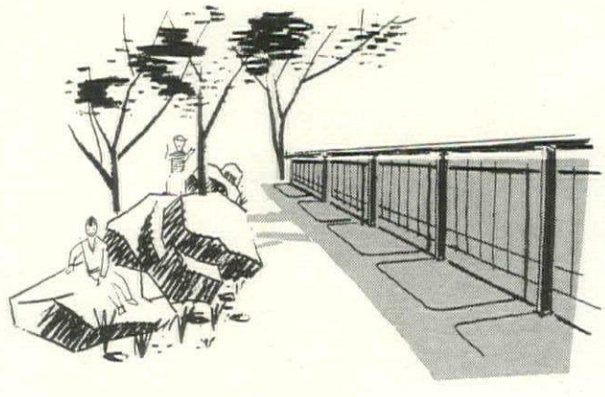
Instead of accepting this insipid stereotype whole, the architects here retained the lovely semiwild ravine cutting their site, boldly divided their school, transformed a "difficulty" into a stunning "opportunity." So far so good. But then the stereotype took over. On either side of the ravine, things were ironed out with little care to the edges of the ironing.

The effect is two buildings which *just happen to be* separated by a ravine, the result anticlimax. For instance, the walk skirting the ravine to the upper school is inherently dramatic, the last quick rise with mystery beyond is a teaser, a promise. At the crest? A parking lot and a general scene which states flatly that the ravine had no significance. Such a buildup to such a let down! The scene demands some simple, natural exclamation point, say an outcrop or boulder. Most schools totally lack, to their detriment, what G. E. Kidder Smith calls "working togetherness of stone mined and unmined"; this school, stopping just short of achieving it, dramatizes the insidious suburbanization of our thinking.



Photos: Joseph W. Molitor

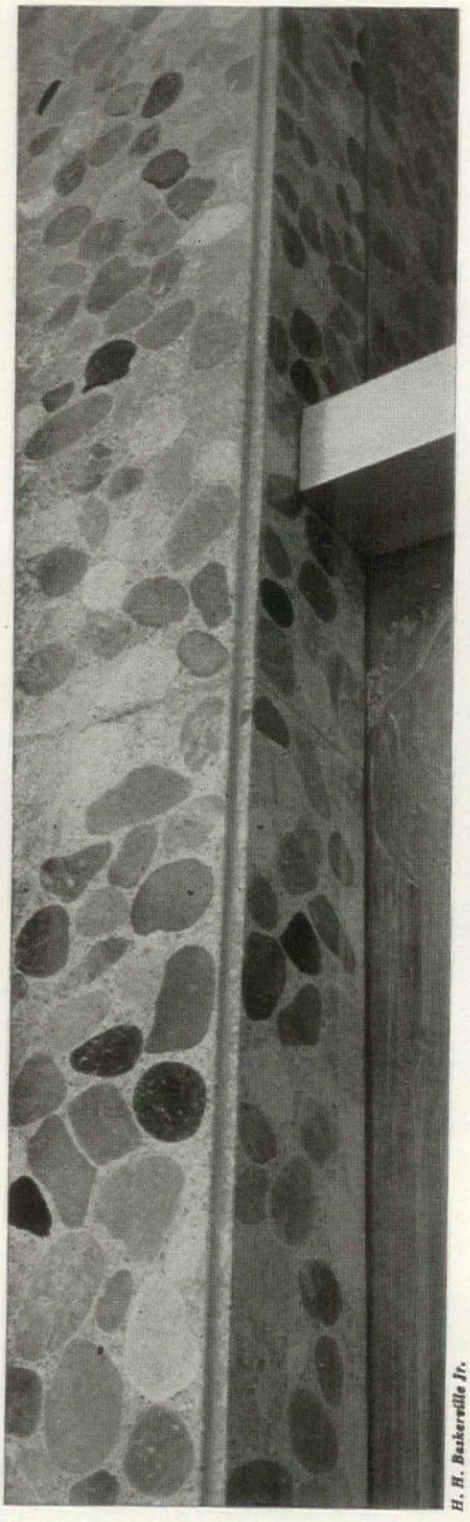




Missing link: grounds between ravine and building are in most cases neither clear extensions of building nor ravine; for instance, amorphous-edged paving next to lower school classrooms (opposite) is neither here nor there. Terrace at higher school (above) is more satisfactory but treatment to foreground is again amorphous. With a little effort school boards may be persuaded to allow retention of a few outcrops or boulders which, as suggested in sketch, might pull school and land together, add natural play "equipment."

Ravine provides splendid view for nicely oriented classrooms. Ravine bottom is grassed-over old road, terminating in delightful little amphitheater (see site plan, opp. p..).





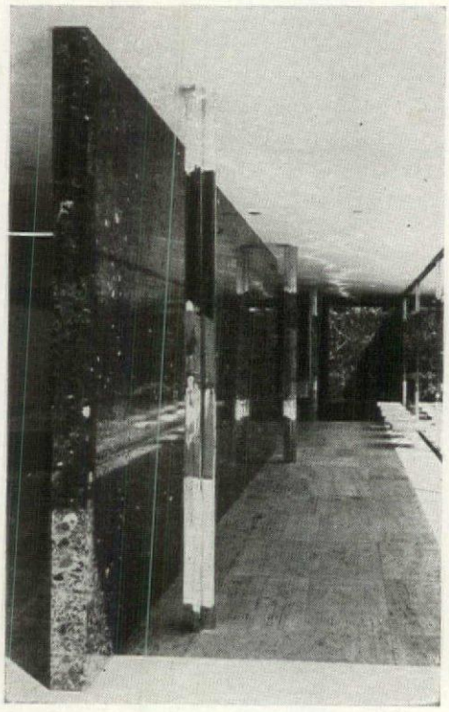
H. H. Baskerville Jr.

MOSAIC

Precast 18" squares of imported marble mosaic are used as veneer for City National Bank in Beverly Hills by Welton Becket. Marble spheres are ground flush with 1" cement binder.

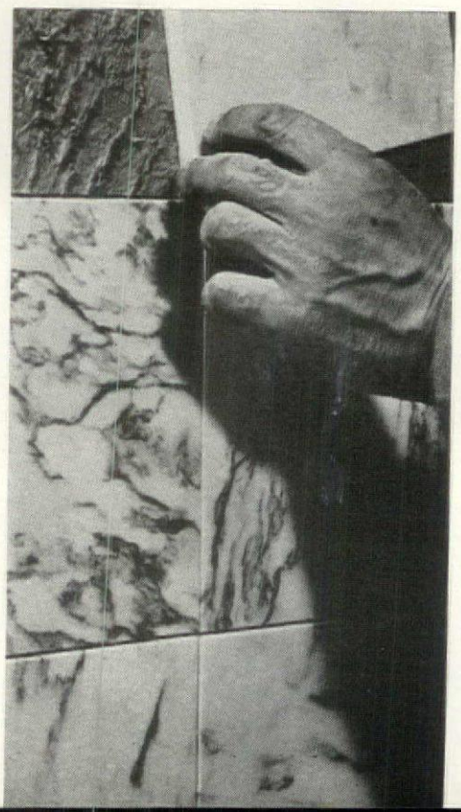
SLAB

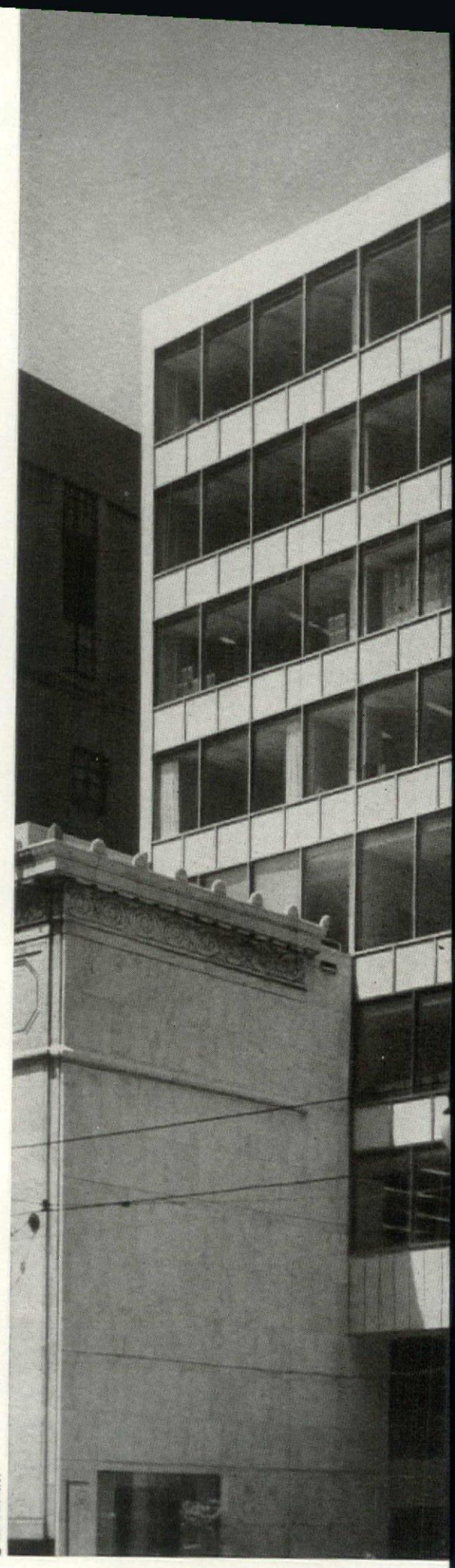
Freestanding walls in Barcelona Pavilion by Mies van der Rohe open an age of elegance in the bounding of architectural space.



TILE

Thin squares of marble set against mastic are quickly finished and make possible richness of effect in most durable historic material.





© Ezra Stoller

CURTAIN WALL

Panels of marble set in stainless steel in Detroit Federal Reserve Bank (Smith, Hinchman & Grylls) contrast with expensive cornice carving.

Fresh handling of slabs, tile, mosaics, curtain walls brings demand for research tests toward

PROGRESS WITH MARBLE

When is marble cheaper to use than brick?

How does it compete with lead?

Where is it better than aluminum?

What new things can be done with marble?

How can its beauty be best brought to light?

Answers to questions like these came forth when the Marble Institute of America invited a panel of technical men and architects* to sit down with them in Chicago and talk about making the material of the Lincoln and Jefferson Memorials into a material for tomorrow's daily use.

Though some remarkable suggestions were made for bringing marble down in cost, the point the architects agreed on was that marble is "elegant"—as Architect Harwell Harris said—and should be treated almost as a precious stone and not as another building material. "Let's give it a proper setting," said Harris, "let's preserve the elegance it has in appearance and in our minds and in history. For example, if we put it in a floor let us treat marble like a valuable rug, not like the subfloor for a rug. Use it in selected areas and frame it as something precious for its beauty. Then it becomes inexpensive but its value counts."

Panels, said he, are modern architecture's most characteristic device for building efficiently and at the same time with rhythm. So the beautiful marble slab, thinly cut, could be used not only in floors but for partition walls and even, if efficiently handled, for utility in school wainscot. Some architects expressed a preference for marble here as the finest of the hard, dense, durable materials.

Not only Harris but Architect Yamasaki and others spoke of setting marble panels *into frames* as a means of cutting down labor used in obtaining hair-thin stone joints, and overcoming effects of building movement, the frame counting also as an element in design. (Divider strips, like those used with terrazzo, can serve the same end.)

Because of marble's density, beauty and ease of maintenance, the architects favored large partition panels in domestic areas, especially bathrooms of houses or apartments. There need be no cheap institutional effect if design is distinguished; quite the contrary. (See Barcelona pavilion photo, opp. p., cited by Architect Edward Stone.)

In choice living areas they saw marble as a possibility in walls, freestanding screens, floors, low table slabs, buffet tops.

Prefabrication would make such marble specialties cheaper, especially the handsome wide lavatory slab with openings cut in advance; modular coordination would make prefabrication practical.

Cheaper mounting methods however are called for. The first most obvious was the development of adhesive techniques. The architects were cautious about use of adhesives with large thick heavy sheets, kept asking how thin large sheets of marble might be cut, under improved production and handling techniques. Could it be made ½" thick or less? All agreed on the value of marble tile, adhesive mounted like ceramic or plastic tile (photo, opp.).

Research was suggested into bringing down marble cost for use in places like floors by inexpensively obtaining *level beds* that would avoid cracking or unevenness at joints; mastics seemed promising as the modern medium for this.

The problem of *marble building exteriors* was what brought out the more startling information, the more remarkable suggestions. It was here that Architect Don Barthelme of Houston mystified the gathering by referring to marble as cheaper than good brick. The cue: in his West Columbia School Barthelme had used large panels of ½" thick, semitranslucent marble in an aluminum frame. It cost $2.25 per sq. ft. installed (1951). What Barthelme saved himself was the cost of either interior or exterior *finish.* The thin marble sheets gave him both. The result was so good the school board was planning to use it again. The limitation: a southern climate is mild, requires no insulation against cold. As for heat transmission, the problem was overcome by design: the marble was put on the shaded side of the building where direct sun would strike it only afternoons after children were out, and stored heat would work out of the thin sheets overnight. Yamasaki declared that in a northern climate, for insulated use, the cost would exceed brick even when skillfully detailed. A good brick at $65 to $75 per thousand would cost $1.75 per sq. ft. installed; marble was quoted at $3 per sq. ft. delivered but not set. It was consequently a beautiful premium material.

For exterior use the architects and technicians found some advantages in marble over metals like aluminum. Its dense surface needs no further finish and the panels properly set have not the leakage problem that compound metal-faced panels have to meet. In his Detroit Federal Reserve Bank, Yamasaki used stainless steel trim to avoid rust streaks, found he had a self-cleaning, richly surfaced and nonleaking wall. (To cut initial stone cost, panel member Davison suggested marble not even gang-sawed but wire-sawed at something like 25¢ a sq. ft. less than today's cheapest, and pointed to the self-cleaning qualities of the ensuing vertical texture; but the architects present said this would not look like marble and could therefore not compete with cheaper kinds of stone.)

Lack of knowledge, need of further research, turned up as the chief obstacle to marble's greater use in exterior curtain walls—walls of tall buildings usually subject to codes. Fire resistance of marble was quoted in widely differing figures by different people in the room—from 1200° F., which would be no better than unbacked aluminum, up to a presumable 2200° F. in marble walls which remained standing by themselves in the San Francisco fire. The industry could not yet safely recommend what thicknesses and weights of marble would take one-hour, two-hour or four-hour fire tests. This means that use of marble *unbacked by fireproofing masonry* is confined to cities with the more lenient provisions. Yet in all but the open question of fire resistance, marble was considered very fine standing by itself unbacked.

Ingenuity might however, even now, overcome code troubles. The ever fertile Mr. Davison suggested for example that marble panels could perfectly well be used to face the kind of "industry truss" that was reported in FORUM (Sept. '54), or in the case of one-story buildings the wall developed by Architect D. Clarence Wilson for a series of schools. In such a plan ⅞" marble panels would sit on a base channel (or the window head of the floor below), would be capped by the window sill above, and supported (in the case of the multistory building) by long, continuous trusses. *For fireproofing, vermiculite or perlite plaster would be shot against the marble from the inside with a plaster pump.* Davison's optimistic price estimate was about $2.40 per sq. ft., perhaps less than porcelain enamel panels, for the combination; the premium would be about $1 over plain metal facing treated the same way, for the big advantage of having elegant marble quality in the building.

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* Architects: Roger Allen, Harris Armstrong, Donald Barthelme, Harwell Harris, George Fred Keck, Ralph Myers, Edward D. Stone, Minoru Yamasaki. Marble Institute of America: Clifford A. King, A. T. Howe. Maintenance: Donald E. Anderson. Technical: Robert L. Davison.



FIRE AND BUILDING DESIGN

PART II: MULTISTORY STRUCTURES*

Because the most serious damage is done by heat and gas—not flame —venting may be the most effective way to cut fire losses, and elevator shafts and air-conditioning ducts may provide the means

Only a few of the 12,500 people who lose their lives each year in fires are actually burned to death. According to coroners' inquests, most of them die of suffocation or are killed by the deadly gases and superheated air generated by the fire.

Even in a relatively small fire the smoke, containing lethal gases, travels with lightning speed to all parts of a building.

After the Cocoanut Grove night club fire in Boston in 1942, which killed 492 people, a nationwide campaign was launched to correct the many thousands of similar fire traps. An attempt was made to reduce their highly combustible decorations, limit their occupancy and police their use. However, this campaign soon lost its impetus and similar cramped, half-lighted death traps reappeared in other cities where the memory of the Cocoanut Grove fire was fading.

Two large life-consuming hotels in 1946 —the LaSalle Hotel in Chicago (61 deaths) and Winecoff in Atlanta (119 deaths)— have apparently created a more lasting and positive impression. They have resulted in correction of many glaring fire protection defects in the better class hotels, but unfortunately they have not yet had an effect on lower grade hotels and many other kinds of multistory buildings.

Fires killing dozens of people occur almost every week, but without national publicity. Particularly hazardous are schools and hospitals because of overcrowding and because panic during a fire or fire alarm is a constant threat.

Venting to the rescue. Venting is perhaps the only control that can be relied upon to prevent the spread of fire gases and superheated air.

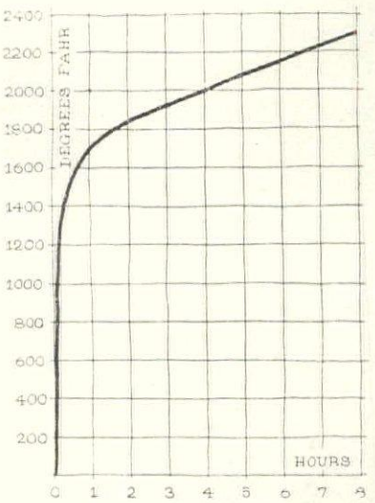
Venting a fire in a one-story building is relatively simple (AF, Sept. '55), yet the need for prompt and effective venting of multistory buildings is greater, even if it is more difficult to accomplish. Here human exposure to fire gases is more intense because the natural flow of hot gases is upward into occupied spaces.

To understand fully why venting is needed during a fire, the speed with which interior temperatures increase during a fire must be realized. From the American Society of Testing Materials' standard time-temperature curve (graph, right above) it can be seen that within the first five minutes the temperature of a standard fire is 1,000° F.—far above human endurance.

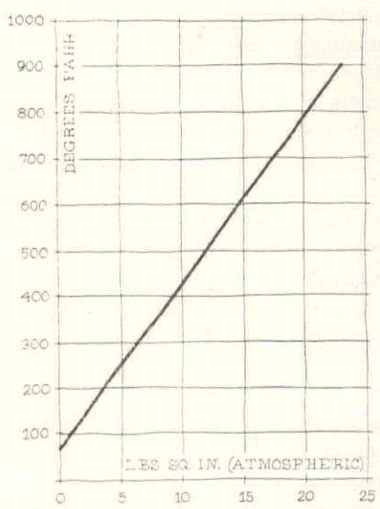
It is imperative therefore that venting to protect human life be automatic and effective within the first five minutes of a fire. Of course, relatively low fire loading (the amount of combustibles in a building) can slow down the rise of an actual time-temperature curve, but human tolerance of heated air is so slight that even low fire loading is not a reliable safeguard.

How fire gases spread. Expansion of gases due to an increase in temperature is a fundamental law of physics known as Boyle's-Charles' Law: $\frac{p_1 v_1}{T_1} = \frac{p_2 v_2}{T_2}$. It means that air heated to 600° F. increases its volume 100% or creates a pressure, in a sealed vessel, of nearly 15 psi (graph, right below). Building construction cannot contain pressures of this magnitude, and the gases are forced throughout the building unless they are guided outside through exhaust vents.

Wood or other combustible material subjected to high temperatures forms combustible gas. For instance, when subjected to a temperature of about 600° F., a pound of wood will generate nearly 3 cu. ft. of combustible gas, enough to supply a flame in a burner for ten minutes. In most fires the combustible gas generated by the heat of the fire cannot burn because of insufficient oxygen, even though the gas is at its auto-ignition temperature. Some fire fighters and engineers therefore object to ventilating a burning building because of the possibility of introducing additional oxygen



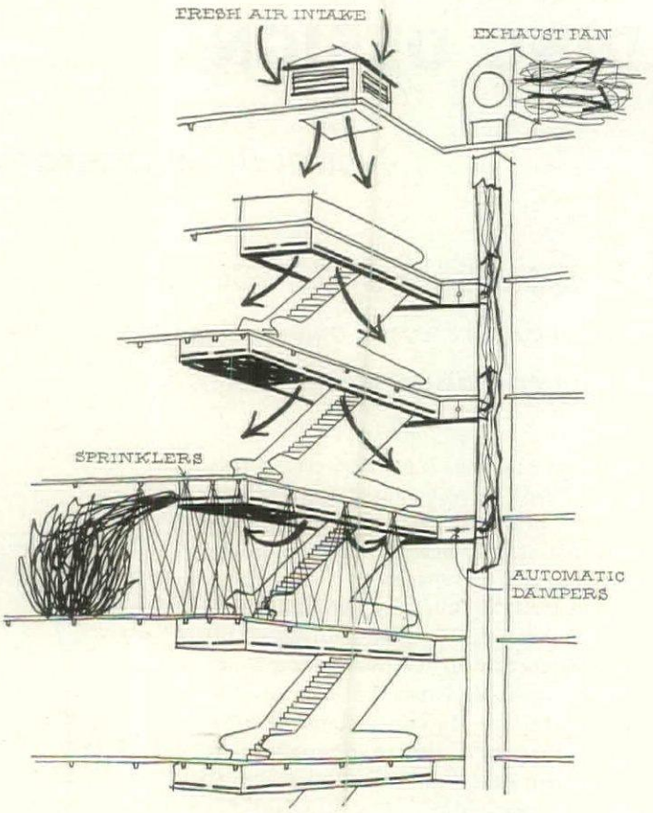
TIME-TEMPERATURE CURVE shows that in the standard fire test air temperature rises to 1,000° F. in only five minutes, to 1,300 in ten minutes—far beyond human endurance.

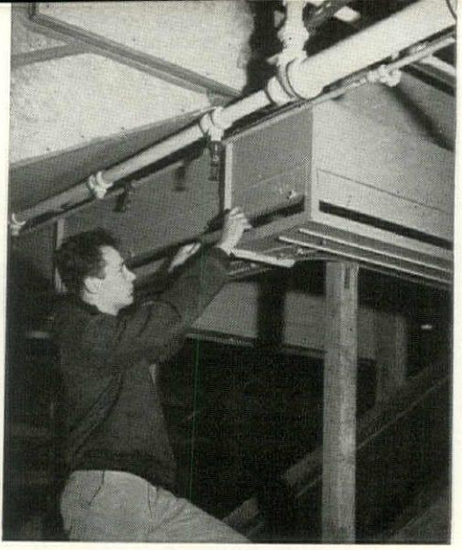


HEAT-PRESSURE LINE shows that increase in air temperature from 70° to 500° F. boosts pressure from normal atmospheric pressure to 12 lb. per sq. in. in a sealed room.

UNVENTED FIRE in Winecoff Hotel in Atlanta began on lower floor, sent hot air and gases into upper corridors and through open bedroom doors and transoms. Deaths: 119. (Associated Press photo.)

* By JOHN T. W. BABCOCK, vice president, US Fire Protection Engineering Service Inc.





Courtesy Otis Elevator

VENTS AND SPRINKLERS are combined to prevent stack of moving stairways from becoming a smoke stack. Fresh air is admitted at top of wellway to further control fire and fume.

which will permit the unburned combustible gases to ignite.

Proper ventilation must release the heated combustible gases harmlessly to the outside without introducing uncontrolled fresh oxygen to the fire. Correct ventilation also must permit the heat of the fire to escape without allowing heat distillation of the combustible materials. Once the interior of a building reaches temperatures well above 600° F., the distillation of combustibles into gases is extremely rapid and the problem of venting is made very much more difficult.

The path of the fire must be directed by venting, but the natural or normal path of a fire cannot easily be diverted. A fire will normally get its air from the side walls through the window and door openings, and the heat of the fire will tend to concentrate at the center of an area. Venting must follow this natural characteristic and take place near the center of the building or area without permitting a heavy intake of air at the sides.

Once the heated gases are in ducts and are being conducted outside they pose the problem of confining their combustion. Air must not be introduced into the vent; it must be constructed of highly heat resistant materials and must be well insulated from adjacent combustibles. If the vent duct is vertical, it will develop nearly perfect combustion and extremely high temperatures.

Venting design. Emergency fire ventilation or exhaust is now required over theater stages in most cities, and some codes have extended the regulation to include all vertical shafts. The codes usually require that automatic heat actuated shutters be opened with a clear area of not less than ⅛ of the area of the stage.

Many codes also require stair towers to be vented to the outside at top and bottom, but stair towers are generally located at the extremities of the building and should be reserved for escape by the occupants and access by the fire department.

Venting elsewhere in a multistory building is not entirely new and untried. In 1947 Otis Elevator Co. with Westinghouse and the Grinnell Co. developed an effective method of preventing smoke and fire gases from spreading upward through department store moving stair openings by surrounding each floor opening with a metal exhaust duct containing a narrow slot and connected to a large exhaust fan (photo and sketch, above). A heat- or smoke-sensitive detector starts the fan, exhausting the air from around the opening and preventing it from traveling upward through the rest of the building.

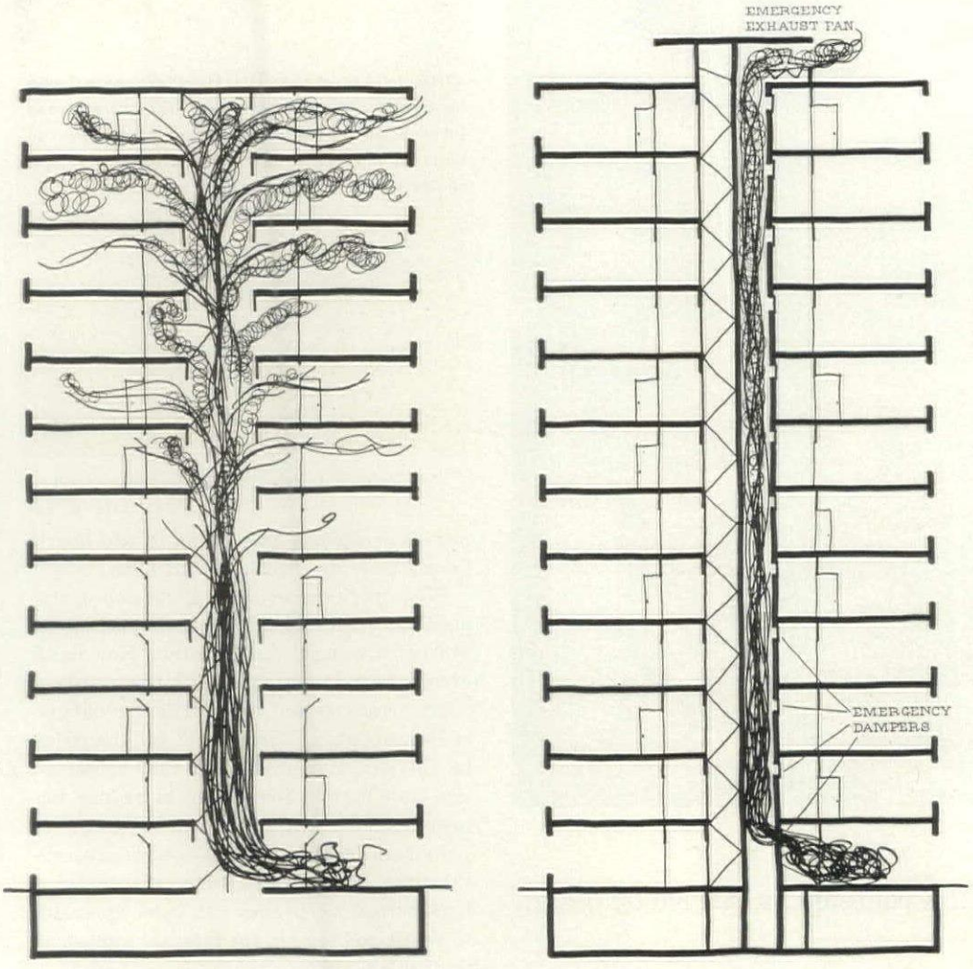
Air cannot be exhausted without controlled air replacement. Replacement air, in this system, is introduced through the upper part of the building so that air flow is downward toward the fire and smoke. Experiments showed that a fan exhausting 9,000 cu. ft. of air per minute will prevent smoke from passing through a 40 sq. ft. opening in a building with a high fire load such as a department store.

Installations of this type have been made at J. C. Penney and Shillito Department Store in Cincinnati; Snellenbergs Department Store in Philadelphia; Sears, Roebuck's in Cincinnati and Sage-Allen & Co. in Hartford.

Can elevator shafts be vents? Theoretically it is entirely possible to use elevator shafts as fire vents, provided that they are properly constructed and are not to be used as a means of leaving a burning building.

The LaSalle Hotel fire started in a small room on the first floor. (No casualties occurred in this room even though it was occupied.) The fire gases entered an elevator shaft and passd upward into the corridors of the 21-story hotel where the heat, unvented, built up to temperatures that melted glass light fixtures. Had the shaft been properly vented at the top, the gases would have passed up and out of the building without spreading to every floor of the building (sketch above).

To convert an elevator shaft into an effective vent, it would be necessary to provide automatic, air-tight louvers on each floor, normally closed but automatically opened by a low temperature heat, smoke



ELEVATOR SHAFT VENT would prevent heated air and gasses from mushrooming in upper floors by conducting them directly to outside. System would require automatic dampers at each floor and roof, auxiliary vents in other parts of building and, of course, abandonment of elevator cab during fire.

HOW BIG SHOULD A VENT BE? Fire loading determines the size of the vent. So far no reliable formula has been derived, but Ford Motor Co. has established arbitrary ratios of vent area to floor area for its new buildings:

Assembling, transmission shops	1 : 150 sq. ft.
Machine shops	1 : 200 sq. ft.
Stamping operations	1 : 250 sq. ft.
Special hazards (curtained)	1 : 20-40 sq. ft. of flammable surface

General Motors (a burned child) uses a ratio of 1 : 40 sq. ft. for all operations.

or flame sensitive device, and of course an adequate clear relief would be needed at the top. Independent heat and gas vents could be developed, where necessary, to supplement the elevator shaft vent—spaced to prevent unnecessary spread of a fire on the floor of its origin.

To reduce the danger of exposure to other property, a spark-arresting screen would be provided above each vent outlet.

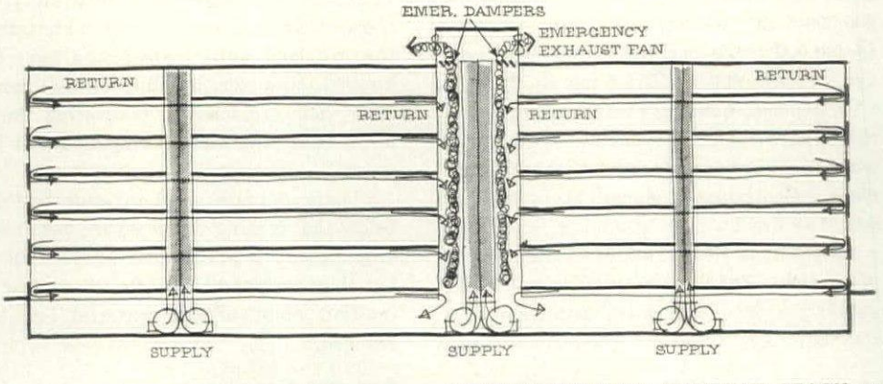
Can air-conditioning ducts be used? The conventional type of air-conditioning system is not readily adapted to the emergency venting of a building; in fact, the continued operation of an air-conditioning system during a fire would probably tend to spread the smoke and fire.

However, in 1938 Detroit Edison Co. designed a combination air-conditioning and ventilating system for its service building that can be quickly converted to exhaust all air to the outside through remote controlled dampers and auxiliary fans. The intake air fans operate or stop, depending upon the intensity of the fire and the volume of smoke.

The Detroit Edison building is a six-story office structure with about 200,000 sq. ft. of floor area. Its air-conditioning system is a warm and cold double supply riser type with mixing dampers at each supply outlet. One central return is used for the three filter and conditioning units in the basement, each unit driven by two fans with a total for the three units of 204,344 cfm. Fresh air is taken in at the second-floor level and fans at the top of the central return riser can exhaust 120,000 cfm, plus normal exhaust from toilets, and other special ventilated areas of 40,000 cfm.

During ideal outside weather the equipment is operated at full exhaust giving maximum fresh air circulation. At other times, the exhaust damper is controlled automatically by the building's static pressure or opened by remote control in an emergency, automatically starting the fans.

Any central riser system such as this can readily be adapted to venting fires by equipping it with dampers, damper controls and auxiliary fans to provide for emergency smoke and fume exhaust. Floors and areas not involved in a fire would have to be isolated by automatic damper control. Any one of the many well-developed smoke detectors could be used as part of this damper and fan control. These devices would also act as an alarm far in advance of a thermal fire detector.



AIR-CONDITIONING EXHAUST STACK at center of Detroit Edison Service building can be used to exhaust smoke and fumes. Fresh-air intake for this windowless building is at either end of second floor.



Gordon Coster—LIFE

FIRE LOAD of LaSalle Hotel's ornate lobby included carpets, upholstered furniture, wood screens and counters. Although damage to building may be greatest on lower floors, loss of life is usually greatest on upper floors.

Fire loading, a building's combustible contents, is carried by design

The Bureau of Standards has evaluated average fire loads by kind of occupancy, taking into account only the combustible contents of the building (the gross fire hazard is the sum of the fire load and the finish and structure):

Occupancy	Combustibles lb. per sq. ft.	Equivalent fire severity* in hours
Hotels	5 to 10	½ to 1
Schools	5 to 10	½ to 1
Institutions	5 to 10	½ to 1
Assembly	Less than 10	Less than 1
Business	10 to 15	1 to 1½
Mercantile	15 to 20	1½ to 2
Industrial	25	About 2½
Storage	30	About 3
Hazardous	40	About 4½

The British classify fire loading somewhat differently: "low" — up to 100,000 Btu's per sq. ft.; "moderate"—100,000 to 200,000 Btu's per sq. ft.; "high"—200,000 to 400,000 Btu's per sq. ft.; "special hazard"—above 400,000 Btu's per sq. ft.

In general, building construction and required fire resistance should be designed without regard for fire extinguishing equipment. Construction should be in balance with the fire loading, assuming for design purposes that the sprinkler system is out of service. For most multistory buildings, except possibly department stores and factory buildings, two-hour fire resistant construction is ample. Construction in excess of this requirement is not technically justified. Fire loading in excess of two hours can be treated in a different manner, perhaps by automatic sprinkler protection.

Materials to avoid. Architects and engineers confronted with complicated fire design problems often seek the aid of qualified experts through the Society of Fire Protection Engineers, but it does not take an expert to realize that many kinds of building materials add to the fire load of a building and should be avoided to keep the fire load within fire-safe design limits. The use of combustible fiberboards as interior finish and acoustical treatment, particularly when suspended as drop ceilings, adds to the fire load as well as to rapid spread of flames. (These materials may, of course, be treated and made flame-resistant.)

Paint finishes do not add materially to the fire load until many coats have been applied. However, building owners can reduce their fire load by restricting the use of oil base paints or specifying water base paints.

Plastic ceilings, used in some buildings below the lighting fixtures, are designed to drop out at temperatures above 150° F., but they may add to the fire load after the ignition point of the material has been reached.

Are two-hour roofs necessary? Most codes at present call for the roof of a fireproof building to have a three-hour fire rating; i.e., it must confine a fire in the top floor for at least three hours. In light-hazard occupancy this is one to two hours longer than the fire load will burn.

When the codes were first developed, the need for confining a fire was important to prevent a general conflagration. Now most areas are well developed with fire resistive construction so that this particular danger is less probable. Why should not the codes be changed to permit light roof construction and permit heat vents to reduce the intensity of a fire within the building?

In most areas even a two-hour roof seems excessive. Most fire departments prefer a lighter roof which they can open up easily to ventilate the area for internal combat of the fire.

Are floor slabs overprotected? Some architects and engineers are questioning the present fire resistance design of the floor slab. They ask whether or not it is higher than is economically required for the safeguarding of the contents of the building.

While it is generally agreed that the main members of the building frame—columns, girders and floor beams—should continue to be designed for the one- to two-hour fire resistance as indicated by the fire load, some consideration could be given to code revisions permitting the floor slab, which is supported by these members, to be merely incombustible.

Those who advocate designing the floor more closely to the anticipated fire load say that such a floor would be considerably cheaper and would still provide for control of smoke, fume and fire spread. Moreover, they say, the light fire loading of most multistory buildings is such that even under the most severe conditions it probably would be difficult to produce a temperature approaching the standard fire-temperature curve.

Some code writers disagree. They say that there is no assurance that a building will always have the same fire load for which it was originally designed. But it is difficult to visualize a hospital, school, office building or hotel being used as a storage warehouse or industrial plant. And it is in going from the first group of occupancies to the second that the important division of fire loading occurs.

* Compared with the Bureau's standard fire. To some extent the actual character of the fire loading causes a variance from these test data. For instance, tightly packed books or baled material will not burn with the same intensity as a pile of lightly crated, partly open material of the same weight.

Hospital fire loads present special design problems

Hospital buildings present a special fire design problem for the architect and engineer. When patients enter a hospital they entrust themselves completely to the staff. Evacuation of a hospital in reasonable time to prevent loss of life is almost impossible. Hence great stress is placed on exit requirements for hospitals in all codes.

Hospitals are exposed to a larger number of fire hazards and sources of ignition than most other lightly fire loaded buildings. In many cases these hazards are located in the most inaccessible areas—a carryover from older hospital experience rather than from necessary solutions. For instance, in many hospitals the operating rooms (where fire and explosion hazards are greatest) are located on the upper floors. Originally this location was intended to bring daylight into the operating room. Now this location is most inaccessible in an emergency.

Because oxygen tents are used frequently today, oxygen is piped into nearly every room in most hospitals. All that is necessary to cause a room "burn out" is to have one patient or visitor violate the no smoking rule. The smoke and fumes may, if not well exhausted, cause the death of others exposed in the area.

Smoking in bed causes up to 80% of the fires in ordinary hospitals. In mental institutions, however, about 30% of the fires are caused by incendiarism. Fortunately half of the hospital fires result in a loss of less than $5 because they are discovered promptly, but the fire menace is always present and disaster, always possible.

Every floor of a hospital has concentrated areas of high hazard where medication is stored and prepared. These areas or rooms are another potential source of worse than average fire likely to spread smoke and fumes to helpless patients.

A fire-safe medical building. One of the safest medical buildings in the US is the new Armed Forces Institute of Pathology in Washington.

The building is completely windowless and designed to be bombproof.

The air-conditioning system has a capacity of 4 million cfm. It consists of seven exhaust systems and eight supply fans and provides a complete change of air every 18 minutes. Only two fans recirculate about 10% of the air in the office areas. The air is exhausted from all laboratories and a slight positive pressure is maintained in the corridors. Fires in the laboratories have not been apparent even in the corridors just outside the room.

The air-conditioning system is equipped with two 600-ton compressors and the equipment, in the event of a bombing, can be automatically blocked off by motorized push-button blast doors. The air can then be recirculated within the building for a period of 18 hours.

Under normal conditions the air is exhausted at the roof and the intake is at the grade floor through filters. Heat is supplied through the same system.

Emergency power for operating the air-conditioning system comes from a 219 kva diesel-driven generator, plus storage batteries with a capacity for emergency lighting for 24 hours. Elevators are grounded in the event of an emergency.

Some of the innovations developed for this building could be used in many office buildings, schools and apartment houses as well as other hospitals to make them safer for occupants during an emergency.

Beyond design, many fire precautions are available to owners . . .

Depending upon the type of occupancy of a building, a certain amount of private fire protection is necessary. A private automatic fire detecting system should be installed along with other electrical work. Provision of a private manual fire alarm system is important in multistory buildings and so is a device whereby a fire alarm can be relayed to the fire department.

Fire alarms need not be alarming. In hospitals, for instance, the paging system is frequently used by announcing a fictitious doctor's name, such as Dr. Red, followed by the location of the fire. In department stores a combination of call lights may be used to prevent panic.

Private fire-fighting facilities are necessary, too. Hose lines located in the corridors or other accessible areas should be provided with short lengths of hose so that they can be maneuvered by one person. The water pressure on the lower floors should not be so high that it causes the hose to break or be unmanageable. In higher buildings automatic pumps are used to assure adequate water pressure on the upper floor.

Stand pipes should be installed to supply the fire department's 2½" hose, but connections adapted to 1½" unlined hose should also be provided. Outside fire department connections can supplement an automatic fire pump if the power fails.

In most kinds of buildings the need for emergency lighting and power facilities is very great. Stand-by electric generators or storage batteries may be permanently connected to the alarm and emergency lights throughout the building.

Those parts of multistory buildings which contain more than average fire loading or hazard (waste paper baling rooms, carpenter shops, kitchens, laundries, etc.) may be further protected by the installation of automatic sprinkler equipment. And, of course, some high hazard buildings, such as department stores, must be completely sprinklered.

. . . and to contractors during construction

While under construction, multistoried buildings of poured concrete are most vulnerable to fire. During this phase an otherwise incombustible building is usually a forest of scaffolding and broad acres of forms. In cold weather this hazardous state is made worse by the use of oil or coke salamanders, which are easily knocked over by workmen or are rendered uncontrollable by lack of servicing and carelessness.

The various trades which use gas cutting and welding torches are another source of fires in partly completed buildings.

Construction fires often occur in the upper parts of a structure where they are inaccessible to the public fire department and are a danger to nearby buildings.

Some fundamentals of fire protection should be practiced during the construction of multistory buildings:

- Hose standpipes which will eventually be part of the completed structure should be brought up with each floor as construction proceeds.
- Temporary hose should be available on each newly constructed floor.
- Flameproofed tarpaulins should be used.
- Water barrels with pails (a nail hole in the bottom will keep the pail from being used for other purposes) should be spotted around the project.

Some of the larger building contractors employ a professional fire protection engineer to make frequent inspections of the project and to make recommendations and devise fire protection safeguards.

How much for fire protection? How much of the capital invested in a building should be devoted to fire protection?

A reasonable amount to devote to the preservation of a building is about 10% of the cost. With careful analysis by competent engineers and a design well balanced between fire loading and structure, it is possible to reduce construction costs so that the necessary fire protection can be developed out of the savings.

for all concerned

CAN ROADTOWN BE DAMNED?

Roadtown USA is catching the same hell in 1955 from thinkers that Main Street caught in 1920 and for the same reasons. Like 1920's Main Street, Roadtown is crude, ugly, vulgar—and vital. And the first sign that something is about to be done about it is naturally a volley of vituperation. Many such volleys preceded Sinclair Lewis's portrait of Main Street, which was graphic but sympathetic. Today's heavy artillery against Roadtown has been aimed not from within the US but from England. Our colleagues on the *Architectural Review* fired one salvo in 1949 on "Man-made America" and another in 1955 on the "Outrage" in England itself (now available in hard covers). "Subtopia" is their epithet for the ragged effect of mankind on city outskirts. "Exurbia" is the name of a bright new US book suggesting that not all is well out farther in the country either, sought as refuge by the bigger executives.

"Roadtown" is FORUM's favorite name for the main cause of this furore; for highways set our over-all building pattern today just as forts set the pattern of the Middle Ages. Not all the ugly things in the countryside occur along roads but most do; and the wirescape that burns the *Review* is just a short circuit from another long line of communication.

Saying bad things about Roadtown is easy. Doing anything constructive is hard. It is easy to assert, as we have, that "the 19th century made our cities into slums but the 20th century is making a slum of the entire countryside." It is hard for "intellectual leaders" to realize that Joe Bloke American has beaten them to the punch with a new idea.

Joe Bloke was the first to realize that a country with 50 million automobiles lives and must live along roads. He started doing this as best he knew how. First he let advertisers paint his barn, then he built a gas station alongside, then diners, tourist homes, cabin courts, juke-box heavens, steak joints, dude ranches. He was Roadtown's real inventor; the "intelligent" people have been merely improvers on his crude but powerful ideas. The sign companies put sappier ads on better constructed frames. Bankers began taking over the motels, and chains the restaurants—the food often equally disappointing. Then again note this: the big brains now spot factories out along the road; the big brains now put department stores in shopping centers along the road; the big brains now build insurance company headquarters out on the road too; and bigger showmen have superseded the roadside juke-box joint with Disneylands and Frontier Villages.

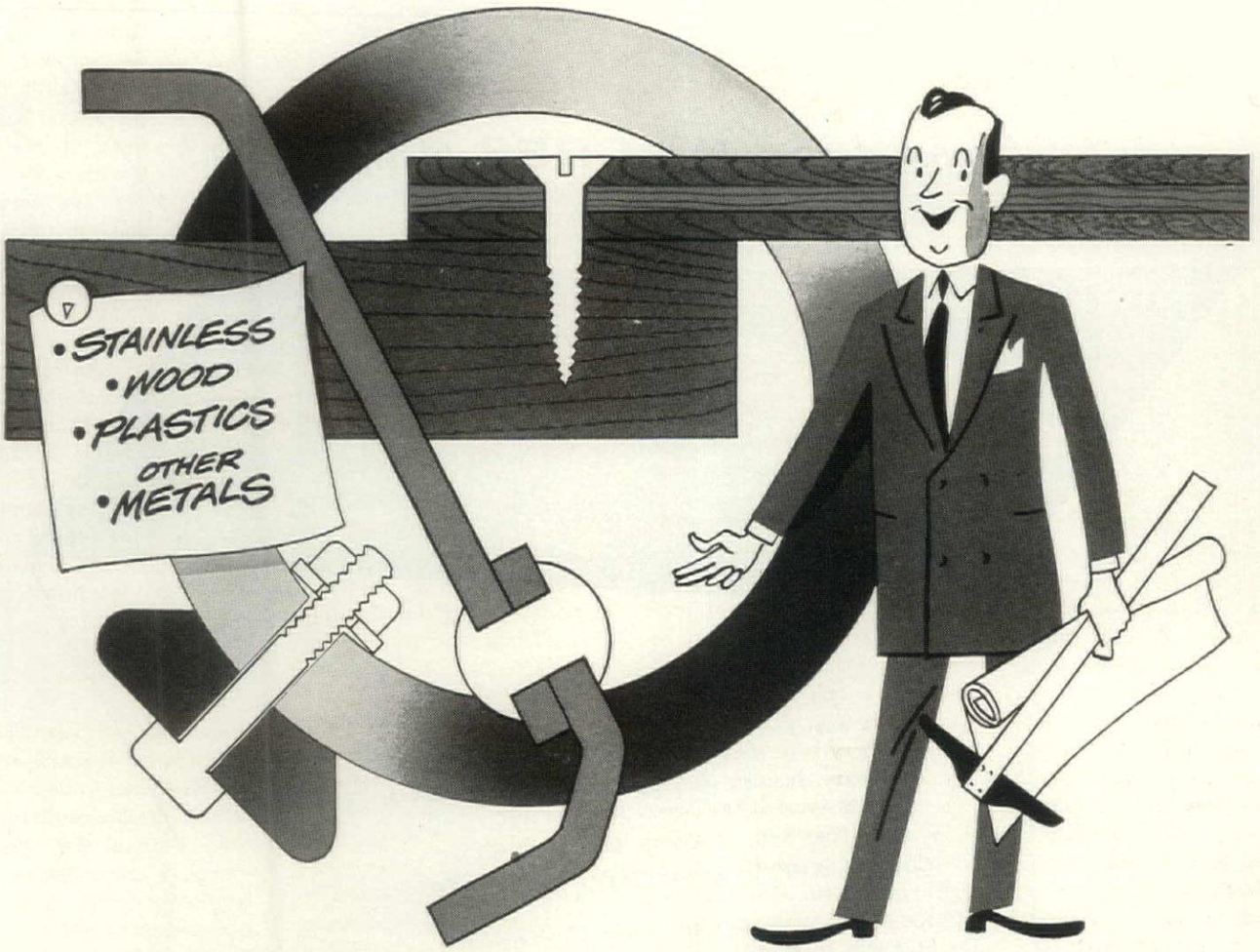
It is consequently no use for sensitive people to throw up their hands at Roadtown and yearn for the *status quo ante*. As long as our economy and our civilization are focused on endless movement and transportation, Roadtown will continue to develop and mature. Two paths are open to us. One is to accept Roadtown as a formidable fact and civilize Roadtown, now that it is commanding heavier highway engineering and bigger building capital. The other is to re-examine the very roots of our endlessly shuttling civilization. On both these subjects FORUM will gladly work with the *Review*.

When the topic was broached last summer to fellow planners in Italy, an Italian critic commented, "Must we pay attention to the cultural lag of ignorant Americans?" The answer is that cultural lag is far less forgivable when it happens among supposedly intelligent people. We should be thankful and are thankful to the *Review*'s editors for shouting against the hash that Roadtown is making of once beautiful countryside, and we are happy to find them setting a higher standard than Americans usually dare set. But the next step is to try winning allegiance from the Roadites themselves by showing an understanding of what they are trying to do and helping do it better. Roadtown can be transformed.

A nice little addition can now be made to FORUM's story in the November issue about the Mile High office project in Denver. We said then that significantly an investment project had been given the high architectural style that is reserved usually for institutional building only. In other words it was found that tenants could be drawn by the prestige of having space in so outstanding an address as a high-style building becomes. Credit was given to "I.M. Pei and Associates," working for Webb & Knapp, the promoters. But Mr. Pei informs us that actually he and his young associates—at age 38 he is their eldest—are separately organized and have for some time been pursuing an independent practice. Eason H. Leonard, associate in charge of coordination for the Mile High job, is 35; Ulrich J. Franzen and Henry N. Cobb, associates in charge of design, respectively 34 and 29; Leonard Jacobson, associate in charge of field supervision, 34. It is heartening to think of a group of young architects trained over some years in the hard school of reality represented by investment building and now going into general work. Perhaps, as the late George Howe said, "youth is always right."

Douglas Haskell





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For improving quality and reliability wherever they're used—and for the economy of lifetime service—specify fasteners made of time-tested Allegheny Ludlum Stainless Steel. ● For fabricators' names and any technical data or engineering help in the use of stainless steel address *Allegheny Ludlum Steel Corporation, Henry W. Oliver Bldg., Pittsburgh 22, Pa.*

W&D 5865

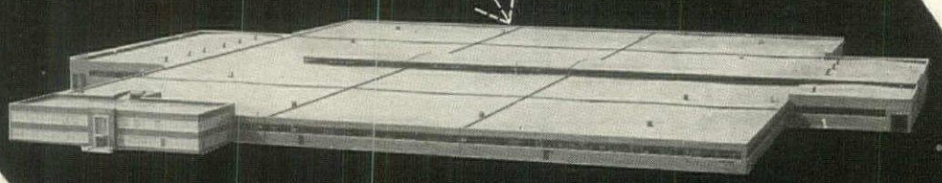
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this roof deck is **9 ACRES** *of insulation!*



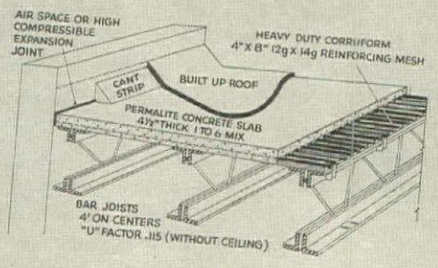
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PERMALITE lightweight insulating concrete was chosen for the 400,000 sq. ft. roof deck of the great S. S. Kresge Company Warehouse, Fort Wayne, Indiana, because it gave the required insulating value at the lowest practical cost.

ARCHITECT: J. E. Sexton, Detroit, Michigan

CONTRACTOR: Hagerman Construction Corp., Fort Wayne, Indiana

PERMALITE SUPPLIED BY: Precast Slab and Tile Co., St. Louis, Missouri.



This deck construction is illustrated as Deck #4-51 in the Permalite Roof Deck Specification Manual.

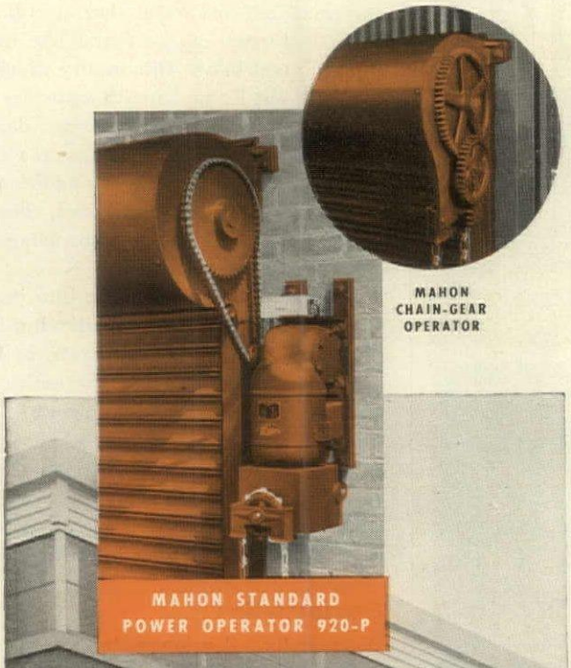
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Rolling Steel Doors

Manually, Mechanically, or Electrically Operated



MAHON CHAIN-GEAR OPERATOR

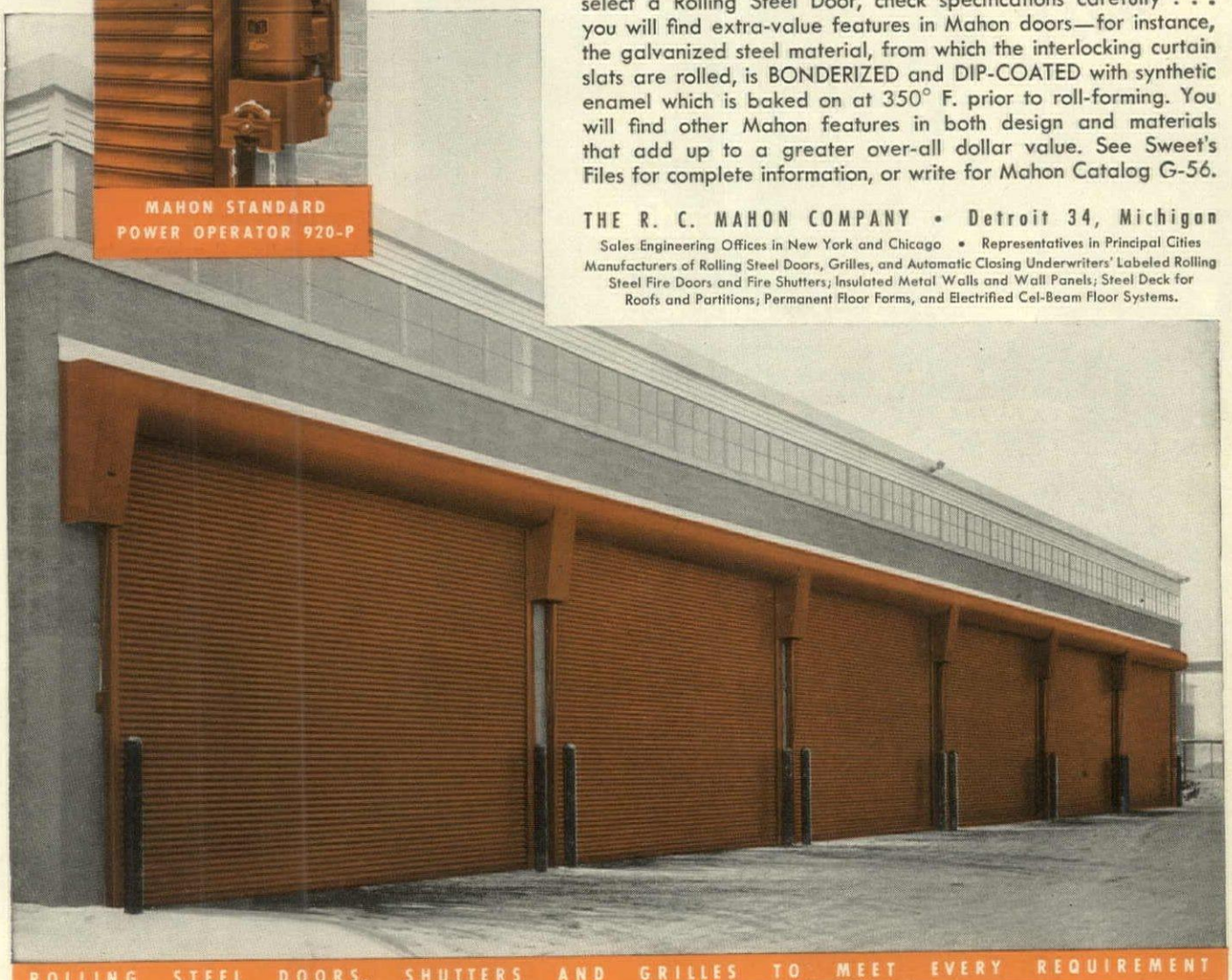
MAHON STANDARD POWER OPERATOR 920-P

If you want real protection, long life, and convenient, timesaving operation, you can't beat the quick action of a good power operated rolling Steel Door. No other type of door can match their compactness in operation . . . the vertical roll-up action of the door curtain occupies no usable space either inside or outside the opening—and, there are no overhead tracks or other obstructions to interfere with material stacking or crane handling adjacent to door openings. A quick-opening, quick-closing Mahon Power Operated Rolling Steel Door will save valuable space and valuable time in any type of opening. In addition, Mahon Rolling Steel Doors are permanent—their all-metal construction assures a lifetime of trouble-free service, and provides maximum protection against intrusion and fire. They require less maintenance, too, because, when the door is open, the interlocking steel curtain is rolled up above the opening safe from damage. When you select a Rolling Steel Door, check specifications carefully . . . you will find extra-value features in Mahon doors—for instance, the galvanized steel material, from which the interlocking curtain slats are rolled, is BONDERIZED and DIP-COATED with synthetic enamel which is baked on at 350° F. prior to roll-forming. You will find other Mahon features in both design and materials that add up to a greater over-all dollar value. See Sweet's Files for complete information, or write for Mahon Catalog G-56.

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Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Fire Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs and Partitions; Permanent Floor Forms, and Electrified Cel-Beam Floor Systems.



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Six Mahon Power Operated Rolling Steel Doors installed in truck openings of a loading dock in the new plant of Sutherland Paper Co., Kalamazoo, Mich. Miller-Davis Company, Designers and General Contractors. A total of thirty-nine Mahon Rolling Steel Doors were installed in various types of openings in this plant.

MAHON

There's one way to be sure when you specify plywood for form work . . .

LOOK FOR THE DFPA* TRADEMARK!

DFPA® TESTED QUALITY

When you specify grade-trademarked fir plywood, you're sure of material manufactured under the rigid industry quality control program and independently quality-tested by DFPA* to protect the buyer. Here are grades expressly made for form work:

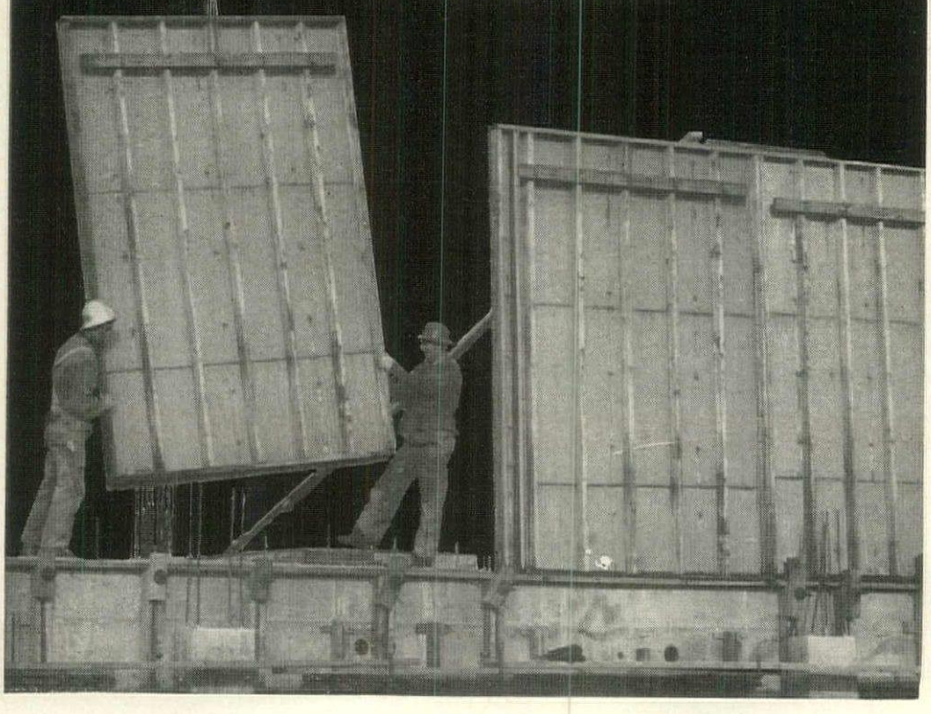
1. INTERIOR PLYFORM®—made with highly moisture resistant glue for multiple concrete form re-use.

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3. OVERLAID PLYWOOD—glossy, smooth, tough resin-fiber surface fused to Exterior plywood. Gives greatest re-use plus smoothest concrete. EXT-DFPA® on panel means 100% waterproof glue.

EXT-DFPA

*DFPA—Douglas Fir Plywood Association, Tacoma, Wash. is a non-profit industry organization devoted to product research, promotion and quality maintenance.



EXCERPTS

Continued from p. 118

are required or a secondary source is indicated. Yet, in the past 15 years the safety margin of many of our public water systems has been narrowed to such a point that over a thousand systems, or 70% of the total, suffered water shortages in 1953. More instances can be found like that of a glass plant in one Illinois city which cannot flush out its tanks with water on Mondays because it is the local wash day.

Increasing industrial expansion requires more and more water. In addition, the expansion in plastics, synthetics, chemicals and chemurgy adds new water-using products to the national picture.

Air conditioning is coming into its own. The introduction of air conditioning into a few large office buildings, plants, or hotels in an area can eliminate the entire local water surplus. A recent decision of a Midwestern insurance company to locate a new regional headquarters operation in a central Illinois city was held in abeyance because of a water shortage which would prohibit air conditioning in the building.

Transportation

Historically, developments in transportation have had a tremendous impact on plant location. It is not just personnel transportation which makes airplane transport desirable. It is anticipated that the airlines will be a major competitor for high-rate freight within the next ten years even though, at present, all airlines, scheduled and nonscheduled alike, carry less than 1/10 of 1% of the total ton miles. Companies will use air freight not just for rush shipments but as a regular and normal method of shipping goods.

The airlines recognize the impact of their service on location. At least one airline has already established an industrial development department whose function is not only to stimulate air shipments but to help in the location of industry in cities served by the airline.

Progressive railroad executives are aware of the industry's problems, and they have introduced many innovations to retain and regain traffic. Diesels and roller-bearing freight equipment have placed through freight trains on passenger schedules. Special equipment is being provided to reduce damage and to speed the handling of freight. Shipper loading rules have been liberalized to permit utmost flexibility. "Transloading," "piggy-back" and "palletization" represent some of the new railroad terminology for successful experiments that benefit the operators and the public.

As decentralization continues, more com-

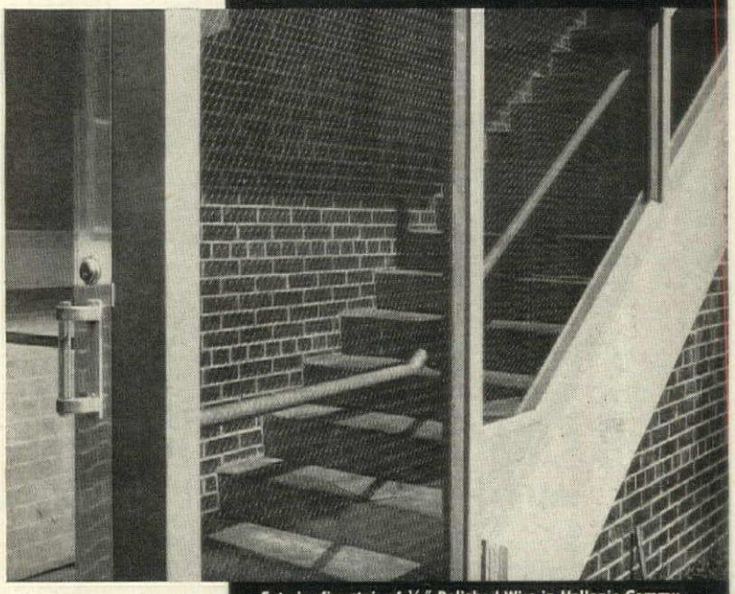
continued on p. 172



Installation of ¼" Polished Misco beneath stair and balcony railing, Lerner Shop, Memphis, Tennessee. Installation by Pittsburgh Plate Glass.

in Step with TODAY'S TRENDS

Strength and Beauty of Mississippi Wire Glass Adapts It To Variety of Architectural Uses



Exterior fire stair of ¼" Polished Wire in Hellenic Community Center, Savannah, Ga. Glazier: Pittsburgh Plate Glass.

Modern design achieves beauty as well as utility with clean lines. The highly interesting patterns of today's wire glass, combined with positive strength and protection make it the ideal modern material. This rugged glass can be used in a variety of ways. On an inside stairway it creates a note of high drama as well as an arresting and effective safety barrier. Enclosing an outside fire stairwell, it guards against flame and accident. In building sidewall sash, it helps bottle up fire, aids in preventing costly conflagrations. Mississippi wire glass protects beautifully at minimum cost in vertical shafts, windows, doors and all other vulnerable locations where fire or breakage protection is desired.



Exterior windows of the North Carolina State Highway and Public Works Commission, Raleigh, N. C., are glazed with ¼" Polished Misco. Architect: Allen J. Maxwell, Jr., Installation by Pritchard Paint and Glass Company.



Give your buildings beauty plus utility. Specify Mississippi Wire Glass, with either Misco or hexagonal wire netting. The original solid wire glass on which the Underwriters' Standard was based in 1899, it is the standard today by which all others are judged. Available in polished or obscure patterns through distributors of quality glass everywhere.

Write for free literature. Address Dept. 6.

MISSISSIPPI Glass COMPANY

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Plus...

Stations At: Clinic Office • Entry • Out-Patient Department • Maintenance

with a LAMSON AIRTUBE AUTOMATIC SWITCHING SYSTEM

Lamson eliminates all inconvenience to patients caused by delay in records handling. Relieves busy personnel from message carrying. Around the clock, it automatically delivers laboratory test reports, time cards, nurses' reports, correspondence and other intra-hospital communications.

For automatic discharge at a pre-determined station, the station number is dialed by turning two bands near the carrier's top. An electrical circuit is opened between two of the metal rings on the carrier. When brushes at a station contact these rings, the circuit is closed. This actuates a switch which throws a deflector across the carrier's path . . . discharging it.

A Lamson Airtube Automatic Switching System can be installed quickly . . . with low initial and operating costs. Localized wiring saves space and expense. Eliminates wiring leading from a central location. Station controls consist of switch, power unit and deflector. The number of stations can be expanded as the need arises. For complete details, mail this coupon today.

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EXCERPTS

Continued from p. 170

panies will rely on highway transportation. Highways have followed the shift of freight business, while the railroads, with minor exceptions, are restricted to the routes built during old programs of construction and extension. As newer and better highways are constructed—a prospect which seems assured by President Eisenhower's proposed road-building program, the success of toll roads, and state plans—truck service will grow and improve, extending the number of communities which can qualify as plant locations and increasing the choice open to manufacturers.

Dispersal

My own experience as a consultant to many companies in matters of plant location has been that production and cost factors are almost always given precedence over defense considerations. For example, in nearly all suburban areas of large cities the advantages of accelerated tax amortization are outweighed by the fact that, in general, labor is not available in sufficient quantity at a distance of ten or more miles from the densely populated sections.

Besides, the company may be able to get five-year amortization anyway. Many new plants in industrial target areas like Chicago have received certificates of necessity. During the first half of 1953 about 2,000 applications for accelerated tax amortization were reviewed in the light of national dispersion policy. While over 300 were located in potential target areas, applications were denied in only three cases. The reason is, of course, that dispersal is only one of several factors used in granting certificates of necessity. But the result, just the same, is encouragement to management to disregard the dispersal factor in plant location.

Summary

Will national defense considerations become more important in plant location in the next decade? The answer will depend to a large extent on changes in the international picture. It is conceivable that what is now a voluntary program may become a compulsory one if conditions worsen.

The use of subsidies to encourage dispersal is not inconceivable. The same is true of greater tax concessions, especially now that the new tax law has made a kind of accelerated amortization (in the form of the declining-balance and sum-of-the-years' digits methods) available to everyone. Unless new efforts are made by the government, it is unlikely that industry will substitute security for economics in selecting its locations unless it is forced to do so.

VERSATILE CONCRETE MASONRY

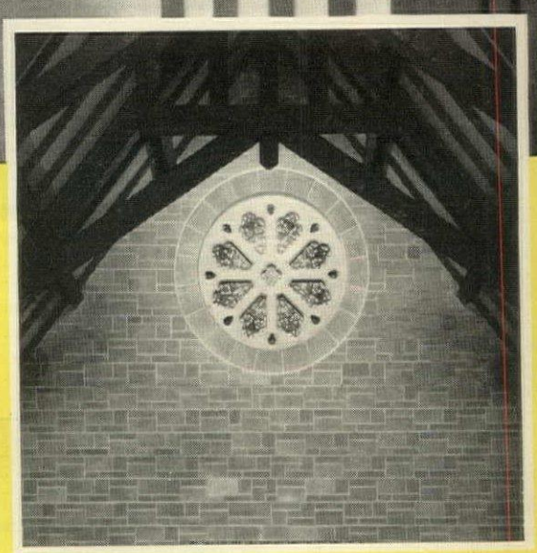
adds grace to the modern church
...dignity to the traditional

Mount Olive Lutheran Church, Des Moines, Iowa—Brooks & Borg, Architects

Concrete Masonry is especially useful to architects for church buildings because of the wide range of shapes and sizes available and is adaptable to any architectural style.

Churches nearly always require large exposed wall areas. Concrete Masonry does triple duty here. It offers the lowest in-the-wall cost of all building materials. Its acoustical properties sound-condition the church—its insulating properties help keep the church comfortable.

Ask your local block producer, a NCMA member, for a copy of the booklet "Concrete Masonry in Church Construction."



Flossmoor Community Church, Flossmoor, Illinois—Hugo C. Haeuser, Architect

NATIONAL CONCRETE MASONRY ASSOCIATION • 38 SOUTH DEARBORN, CHICAGO



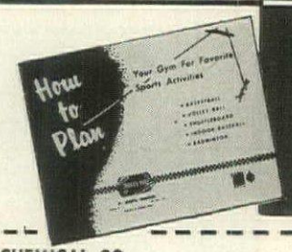
UNIVERSITY OF MARYLAND

New Main Gymnasium and Arena—Architects: Hall, Border & Donaldson, Baltimore

THIS Beautiful New MARYLAND FLOOR with the HILLYARD FINISH for Champions invites play by the nation's top-ranking teams. At the same time, the superb toughness of the floor finish is more than adequate to take the punishment of every activity planned for this giant new arena. This floor was sealed with Hillyard's Penetrating Seal No. 21, followed by Hillyard Gym Finish. The Hillyard "Maintaineer" planned the treatment program, and supervised the entire finishing.

The Hillyard Maintaineer in your vicinity will gladly give you the same consulting and advisory service, without charge or obligation. He will act as your "Job Captain." Just mail the coupon below.

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Assure Maryland's Gym Floor

- Controlled Light Reflection for greater spectator enjoyment
- Takes heavy wear years longer
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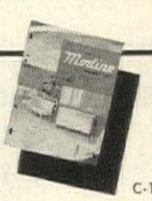
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FOR new construction or remodeling, Modine Cabinet Units give you quick, positive and quiet distribution of heated air. With modest-priced accessories, they also provide introduction, filtering and distribution of outside air. Yes, here's the most practical way to heat or ventilate large public rooms or entryways. Some units heat with hot water, cool with chilled water. Others for steam or hot water heating only.

Choose from five models—120 to 640 Edr. Get all the facts and you'll never install unsightly radiators again. See the Modine representative listed in your classified phone book or write for Bulletin 552—Modine Mfg. Co., 1507 DeKoven Ave., Racine, Wisconsin.

ABOUT THE PHOTOS **1.** Type BT unit with plenum base installed in school entryway. Duct work concealed in wall discharges heated air through wall grill. **2.** Type BF unit with plenum base recessed in masonry wall of supermarket. **3.** Type BT unit, ceiling-mounted in lumber company office and display room. **4.** Type BF unit with plenum base installed in church.

Modine
CABINET UNITS



C-1261

BOOKS

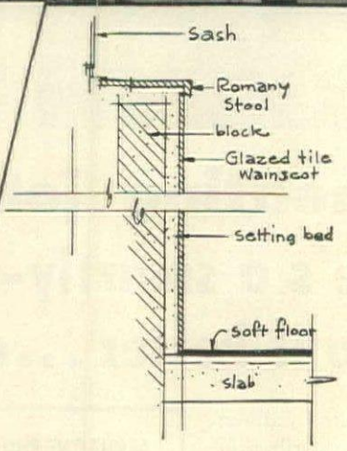
HOW TO DEAL IN REAL ESTATE. By Clyde T. Cadwallader. Prentice-Hall, Inc., 70 5th Ave. New York 11, N.Y. 362 pp. 6" x 9¼". $5.95

The author of this book has been a practicing attorney for more than 30 years. First as a hobby, then as a full-time money-making sideline. He became a real estate "dealer" or country cousin of the big city "operator," buying and selling small houses, resort cottages, old farms and undeveloped suburban land that would soon be ready for subdividing. There are few transactions for more than $10,000 described in this book. It has nothing for the professional realtor. It might be useful, however, for architects (or other imaginative people outside of large cities who have time and a few thousand spare dollars to invest in a speculative manner.) They might like to try for some of the attractive returns that are available from real estate when even the smallest properties are bought right, from anxious sellers, and resold right, perhaps after the elimination of eyesore conditions or the addition of a few improvements to new, eager buyers. It takes money and risk to make large profits in any line. This book explains how to do so with miscellaneous small real estate parcels.



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WINDOW SILLS AND WALLS

The new ROMANY Window Sill Tile makes possible, and economical, a surface of the same general color as other trim in a school room. It provides an exceptional cleanable flat smooth surface for exhibits. Available in all Buff Body colors and priced to readily compete with most permanent sill materials. The ROMANY Wall Tile will withstand the scuffing of children in the classroom, also the bumping and ramming of mops and polishing machines.



CLASS ROOM WALL

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THE SHOPPING CENTER VERSUS DOWNTOWN. By C. T. Jonassen. Published by Bureau of Business Research College of Commerce and Administration, The Ohio State University, Columbus, Ohio. 170 pp. 6" x 9¼". Illus. $3.50

Written in the researcher's typically dry style, the text of this book is difficult reading. Fortunately, however, most of the pages are devoted to tables and charts of interesting data gleaned during surveys of Columbus, Seattle and Houston.

Although they point to no new problems or solutions, the author's conclusions do document most of the claims downtown property owners have been making for a long time. Excerpts:

"The downtown section has the advantage over the suburban shopping centers *in all three cities* on 16 of 23 factors.

"The most important *disadvantage* of the central business district was difficult parking; next in importance for all cities was 'too crowded'; and third, traffic congestion.

"The *advantages* of downtown shopping were, in the order of their importance: first, 'large selection of goods'; second, 'can do several errands at one time'; and third, 'cheaper prices.'

"Opinions concerning suburban shopping centers . . . agreed that closeness to home was the chief *attraction* and that the *disadvantages* of the suburban shopping centers are 'lack of large selection' first, 'not all kinds of business represented' second, and 'prices too high' third.

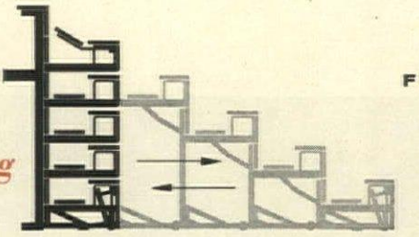
"Though parking is the greatest disadvantage of the central business district, and though traffic conditions of the downtown area in the cities of the study are troublesome to people when they want to procure shopping goods, these disadvantages apparently are not troublesome enough to determine or greatly affect their shopping orientation when all factors are taken into consideration.

"When people want to procure shopping goods, higher socio-economic groups living at the periphery of a city patronize downtown more and evidence more favorable attitudes to it than do lower economic groups living in similar locations.

continued on p. 180

WAYNE

Wayne Gymnasium Seating



FUNCTIONALLY
BEAUTIFUL
BEAUTIFULLY
FUNCTIONAL

In Gymnasium Seating for modern school plants this name commands respect. Wayne gym-seating successfully combines a smooth, smart, modern appearance with engineering advances that make Wayne stands remarkably efficient.

Select woods, fine finishing, and a completely vertical front when closed give Wayne gymstands the appearance of handsome wood paneling. Fully closed riser boards provide maximum safety and present a better appearance when extended.

Exclusive rotating alignment frames guide Wayne Rolling Gymstands to a straight, parallel position, free from jamming or side sway.

For complete reliability, modern, practical design, and attractive appearance, specify WAYNE.







Rolling Gymstand Catalog R-54 free on your request...Write for it! Wayne Iron Works, 150 N. Pembroke Ave., Wayne, Pennsylvania.





Chicago's Grant Park Underground Garage uses Corning flat and bent Alba-Lite lightingware. Alba-Lite comes in a variety of bends to provide design flexibility. Flat Alba-Lite panels are available in three patterns offering true light source transmission, exceptional brightness control by diffusion, high fixture efficiency, permanence and low upkeep cost.

Owner—Chicago Park District
Consulting Engineers—Ralph H. Burke, Inc., Chicago, Ill.
General Contractor—Electrical work installed by White City Electric Company and J. Livingston and Co., under John Griffith & Son Construction Co., all of Chicago, Ill.
Fixture Manufacturer—Solar Light Manufacturing Company, Chicago, Ill.

Safe, glare-free illumination

for world's largest underground garage

No more circling weary blocks looking for a place to park in Chicago's busy Grant Park area.

Now you swing your car off the street down a ramp to the new Grant Park Underground Garage. There's space there for 2359 cars in 787,000 square feet of floor space.

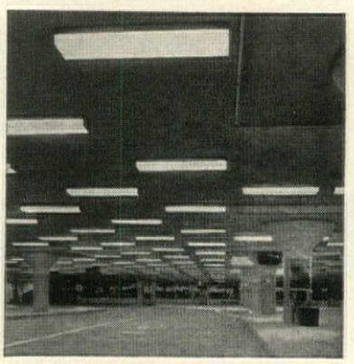
Lighting in this garage, wherein 90% of the cars are self-parkers, must provide for quick adjustment from natural to artificial illumination. "Avenues" must be bright—but free of accident-causing glare and shadows. Walkways must be safe for pedestrians on their way to and from their cars.

High efficiency

Corning Alba-Lite lightingware was selected because it meets all of the requirements for safe lighting established by the Chicago Park District. Alba-Lite is a translucent opal glass. It transmits 60-65% of the light and diffusely reflects 25-30% for an efficiency of greater than 90%. And Alba-Lite transmits the true color of the light source.

In this area where discoloration of lightingware by exhaust fumes could be an expensive maintenance item, easy-to-clean Alba-Lite again proves a wise choice. Nor will time ever dim Alba-Lite's sparkling appearance.

For additional information about Alba-Lite and other Corning-engineered lightingware—louvering, diffusing, and prismatic—use the form below.



Connected lighting load, approximately 450 KW. Maintained lighting level, main thoroughfares, 22 foot-candles. Maintained lighting levels, distribution center, 30 foot-candles. Average parking area illumination, 10 foot-candles.

CORNING GLASS WORKS
CORNING, N. Y.

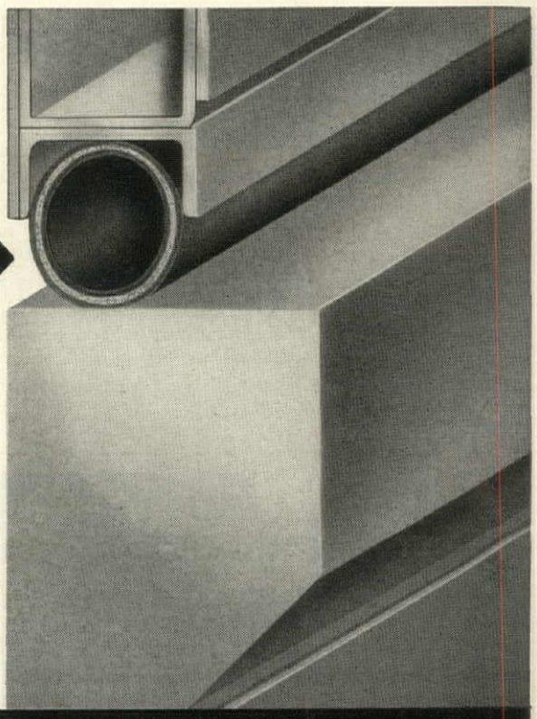
Corning means research in Glass

CORNING GLASS WORKS, 65-12 Crystal Street, Corning, N. Y.

Please send me a copy of the "Architects and Engineers Handbook of Lighting Glassware."

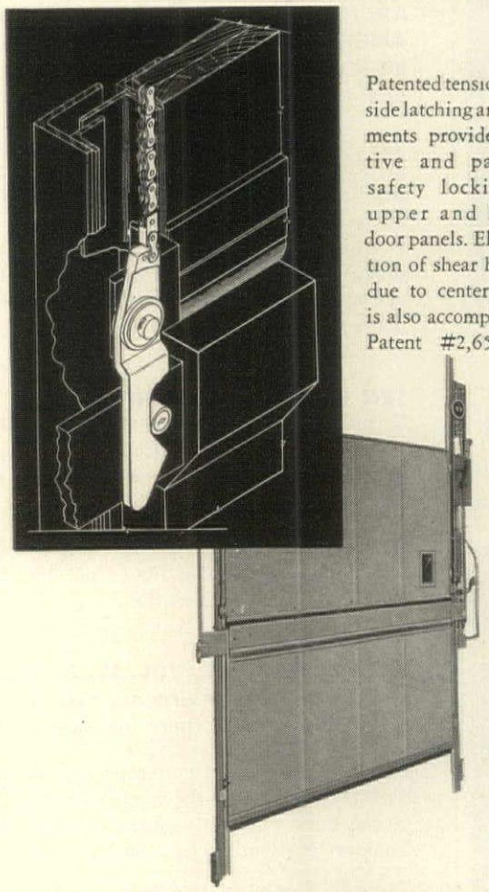
Name.....Title.....
Company.....
Address.....
City.....Zone.....State.....

THE PEELLE SAFETY SEAL ASTRAGAL



Cross section at the meeting rail of the Peelle Freight Elevator Door showing the Peelle Safety Seal Astragal—a flexible tube of neoprene and asbestos. This eliminates the dangerous shear hazard of an overlapping steel astragal.

PREVENTS SHEARING ACCIDENTS ON FREIGHT ELEVATOR DOORS



Patented tension dual side latching arrangements provide positive and parallel safety locking of upper and lower door panels. Elimination of shear hazard, due to center latch, is also accomplished. Patent #2,659,457.

Here is the greatest safety advance in freight elevator doors since the introduction of the electric interlock. The Peelle Safety Seal Astragal completely eliminates the danger of sheared fingers by an overlapping steel astragal which, until recently, was necessary on all bi-parting freight elevator doors bearing the Underwriters' Laboratories label. Now both Underwriters' Laboratories and Factory Mutual Laboratories have approved the use of the Peelle Safety Seal Astragal on Peelle Doors with 1½ hour rating.

Peelle Freight Elevator Doors, equipped with Peelle Safety Seal Astragals, are now being used by Eastman Kodak Company, Aluminum Company of America, United States Rubber Company, American Cyanimid Company, Goodrich Tire & Rubber Company, General Analine & Film Company, the Consolidated Edison Company and many others.

Peelle Safety Seal Astragals may be installed on Peelle Freight Elevator Doors now in use and can also be applied to any other Peelle Bi-Parting Horizontal or Vertical Sliding Doors.

Write for details.

MOTORIZED DOORS SPEED UP ELEVATOR SERVICE

THE PEELLE COMPANY • 47 Stewart Avenue, Brooklyn 37, N. Y.

Offices in Principal Cities

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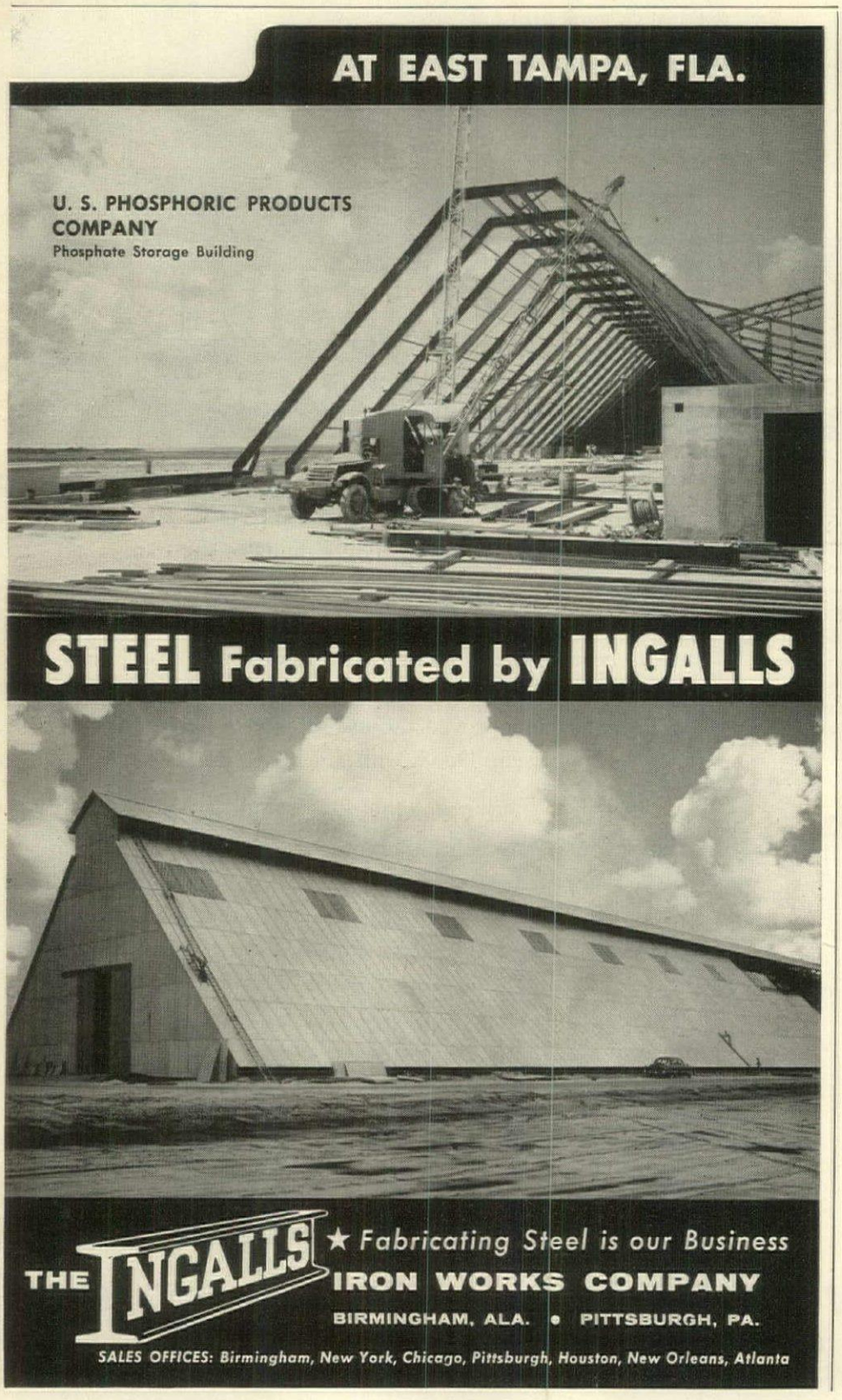
BOOKS

Continued from p. 176

"Differences between age groups are not always significant, but where significant differences do appear the 50-64 year category is more strongly oriented toward downtown than is the 18-34 or 35-49 year group.

"Merchants in the downtown area, if they are to maintain their dominant position, will need to recognize, utilize and exploit the solid advantages of their locations. They must also bend their effort to prevent congestion and parking difficulties from raising the 'cost' in inconveniences of downtown shopping.

"Of all these inconveniences, parking has most often been singled out as the most damaging to the central business district. The results of this research indicate that parking, though it is downtown's greatest disadvantage, is not as serious a handicap to downtown business as many believe, since analysis reveals that it does not greatly affect the shopping orientation of persons when other factors are taken into consideration. A number of reasons may be advanced to explain this phenomenon: in the first place, a large proportion of people do not use their cars for shopping downtown. To these must be added many who have reserved or private parking facilities. Moreover, the buying of shopping goods is infrequent, the average person shopping about once a month. In other words, the parking difficulty *as far as shopping downtown is concerned* affects a large proportion of people not at all and the majority infrequently. Thirdly, the advantages of the central business district as against the suburban centers are of such a nature that the majority are willing to pay the inconvenience cost to get what they feel is available only downtown. Since parking seems, however, to be the number one disadvantage of downtown, efforts to improve that situation will increase the stability of the area. Parking, however, should be kept in its proper perspective. Other measures, such as the improvement of mass transportation, should not be neglected."



ARCHITECTURE, AMBITION AND AMERICANS. By Wayne Andrews. Published by Harper & Bros., 49 E. 33rd St., New York 16, N.Y. 315 pp. 6¼" x 9½". Illus. $7.50

This is a highly interesting history of US architecture from Sir Christopher Wren's buildings in Virginia to Eero Saarinen's research center for General Motors in Detroit. The story of each of the country's great buildings is told in detail in terms of the people behind the design—the architects and their clients.

TEN BOOKS ON ARCHITECTURE. By Leone Battista Alberti. Published by Alec Tiranti Ltd., London. Distributed by Transatlantic Arts, Inc., Hollywood-by-the-Sea, Fla. 256 pp. plus illustrations. 7¼" x 10". $8.50

A complete reprint—by the photo offset technique—of the *Ten Books on Architecture* from the 1755 edition.

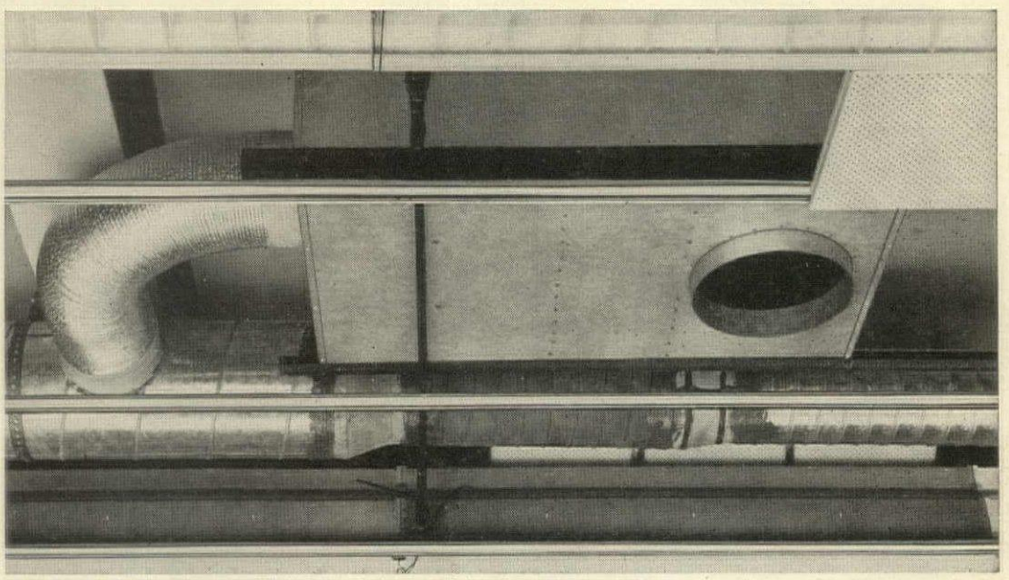
WORLD THEATRE, VOL. IV, 3. Theatre Arts Books, 224 W. Fourth St., New York 14, N. Y. 88 pp. 7" x 10". Illus. Paperbound. $1.20

A special issue on contemporary theater architecture around the world of a quarterly magazine published by the International Theater Institute with the assistance of UNESCO.

CONSTRUCTIONAL STEELWORK. By Oscar Faber. Published by Philosophical Library, 15 E. 40th St., New York 16, N.Y. 368 pp. 5¾" x 9". Illus. $12



UNION CENTRAL Annex Building, Cincinnati, utilizes some 200 Kno-Draft High Pressure Air Diffusers for quiet, draftless, comfortable air distribution.



BEHIND THE SCENES photo shows typically compact Kno-Draft single-duct system. Note flexible connectors. Outlets at same level as ducts explain why...

High Pressure Saves Space

Space saving, of course, is only one advantage of high pressure air transmission. But it's important. High building costs make it worth while to reduce space allotted to air ducts; and in existing structures, small high pressure ducts have permitted central system air conditioning where space limitations prohibited conventional designs.

Additional advantages of Kno-Draft high pressure systems are: (1) flexibility to meet changes in air conditioning requirements without modifying the system, and (2) individual room temperature control from central station systems.

Kno-Draft High Pressure Air Diffusers are especially designed to handle air at branch duct velocities up to 3,000 feet per minute. Outlets are equipped with dampers and sound traps to eliminate noise. System provides even temperatures throughout the area *without drafts.*

For a full description of Kno-Draft High Pressure Air Diffusers and layouts for typical systems, read the Connor textbook on the subject. Write on your letterhead for a copy of Bulletin K33. Connor Engineering Corporation, Dept. D-125, Danbury, Connecticut.

see our catalog in ARCHITECTURAL FILE or write for copy

CONNOR ENGINEERING CORPORATION

kno·draft®
adjustable air diffusers

For architectural adaptability. .

— — specify Pittsburgh

Architects and building owners know that Pittsburgh's Herculite and Tubelite Doors are unequalled in their handsome appearance, flexibility, long life and dependable operation. Therefore, more and more of them insist that these doors be used. Whether your entrance calls for a single door or a multi-unit installation, it will be to your advantage to specify *Pittsburgh* Doors.



HERCULITE®

In this remodeled building of The Bank for Savings, New York City, Pittsburgh's Herculite Doors were installed. The fresh, modern look which these doors give this building is typical of what they can do to create entrances of immediate appeal. Herculite is made from Pittsburgh Polished Plate Glass, subjected to a special tempering process making it four times stronger than ordinary glass of the same thickness. The doors shown here are equipped with *mat*-activated Pittcomatic openers. These automatic units are ideal for entrances to buildings where heavy pedestrian traffic is encountered. Architects: Alfred Hopkins & Associates, New York City, N. Y.

For detailed information on Pittsburgh Doors, see Sweet's Architectural File . . . sections 15a/Pi and 15d/Pi . . . or write to Pittsburgh Plate Glass Company, Room 5404, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.

dependable operation...long life

Doors

TUBELITE®

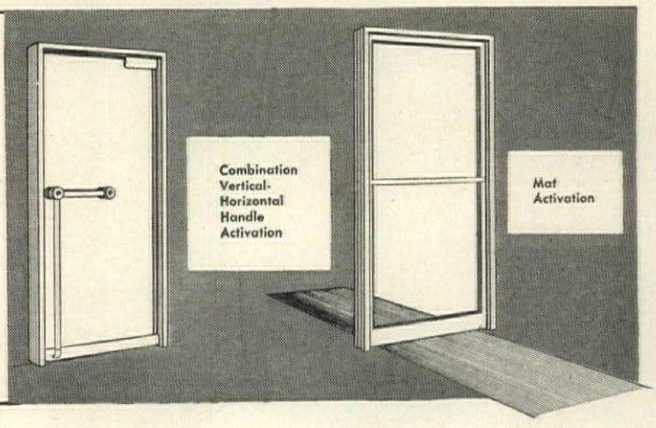


This new building, the Industrial Federal Savings Bank, Denver, Colorado, utilizes Pittsburgh's Tubelite Doors to give it its clean, distinctive appearance. Tubelite doors and frames are nationally recognized for their simplicity of design which makes them adaptable to any architectural demand. They mark a real advance in hollow metal entrance design. Their unique interlocking feature makes Tubelite Doors extremely rigid. This holds their true shape through long and continued use. These doors are easily and quickly glazed and installed. Tubelite means the most value at the lowest possible price. In the entrance shown here, the Pittcomatic door opener, with vertical handle activation, was selected. Architects: Linder and Wright, Denver, Colorado.

THE PITTCOMATIC®

opens Herculite and Tubelite Doors at a touch!

How the Pittcomatic operates: Smooth hydraulic power is supplied by the power unit, through ⅜" copper lines, to the hinge under the door. In the *handle*, or *mat*, there is a 10-volt circuit which passes through the control box and activates the power unit. Adjustments provided in the control box and the hinge regulate the action of the door. It's the safest automatic door opener to operate—the easiest to install and maintain.



TYPICAL PITTCOMATIC INSTALLATIONS

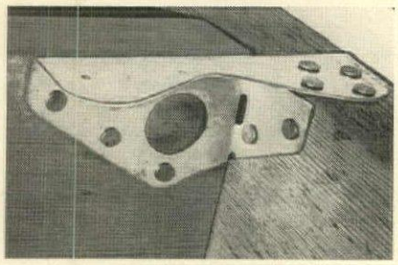
PPG

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS · FIBER GLASS

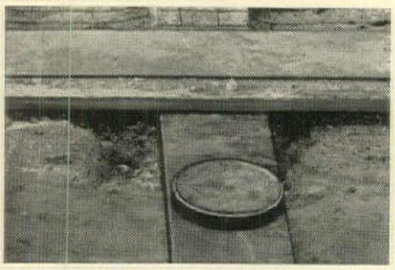
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

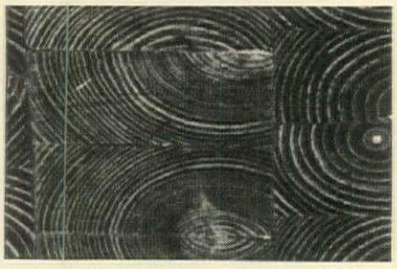
PRODUCTS



Neat anchors at Junctions (p. 206)



Circuits, circuits everywhere (p. 192)

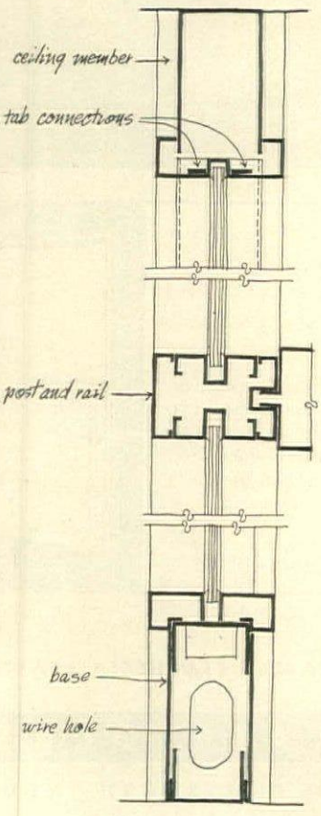


Swirling grain underfoot (p. 216)

Eight-part partition system takes on variety of panel materials



GLASS AND STOCK DOORS are used interchangeably in partition system on 3′ module. Perspec's framing also adapts to solid and laminated panels of different material and thickness.



Although many buildings start suffering from internal obsolescence even before the cladding gets dirty, prefabrication of rearrangeable partitions has hardly kept up with developments in exterior curtain walls. Too many of the standard partitions are expensive, complicated and inflexible. Aetna Steel, realizing that today's office requirements make shiftability an essential factor in partition design, has engineered a highly adaptable steel-framed system called *Perspec*. Delivered on the job semi-assembled in just eight components (from 12 factory formed parts), prefab *Perspec* also reckons with the architect's and client's preferences for a nonstock look. The system's basic 2 x 3 framing member can accommodate filler panels of ¼″ plate glass, ⅜″ hardboard, 2″ or 3″ solid or hollow core sandwiches on any module from 2′ to 10′. At any time administrative shifts make it necessary, any single panel or group of panels can be removed by snapping off the cover plate on the end post and lifting out the one or more sections. Even glazed panels are handled as easily as framed pictures. Posts, postcovers and base are all formed of 18-ga. steel, the rails of 20-ga., and the cornice of 16-ga. cold-rolled steel. All get a baked-on rust-resistant coat at the factory before assembly and are ready

continued on p. 188



cuts clay tile installation costs up to 20%...or more!

CTA 11

The new 3M Clay Tile Adhesive makes installation so much faster and easier—even modest budgets can afford clay tile now!

3M Clay Tile Adhesive dramatically cuts installation time and installed costs of beautiful clay tile.

CTA 11 is so fast, so clean, so easy to use that installation costs have been lowered by 20% or more. Schools, stores, factories, homes, new construction and remodeling—all can now enjoy clay tile luxury even on limited budgets.

Dry wall, plaster, concrete block, plywood, metal or virtually any plumb, solid wall surface is suitable for installation of clay tile with CTA 11. No premixing. It spreads like butter right from the can. Only a trowel is needed. And CTA 11 will hold a ton per tile, with a resilient, enduring bond that resists water and settling cracks.

Gain similar advantages by setting ceramic floor tile with CTA 12. Get full facts on CTA 11 and CTA 12 fast. Write today to 3M, Department 1812, 417 Piquette Avenue, Detroit 2, Michigan.

Tilemen themselves report:

(1) CTA 11 allows tile contractors to handle more jobs per month, with greater profit opportunities.

(2) CTA 11 avoids the extra labor, time and clean-up cost usually encountered.

(3) CTA 11 allows tile installation and grouting on the same day.

(4) CTA 11 avoids costly repainting and allows the tile installation to be made before or after the finished carpentry.

(5) CTA 11 allows tile setters to work right through the winter.

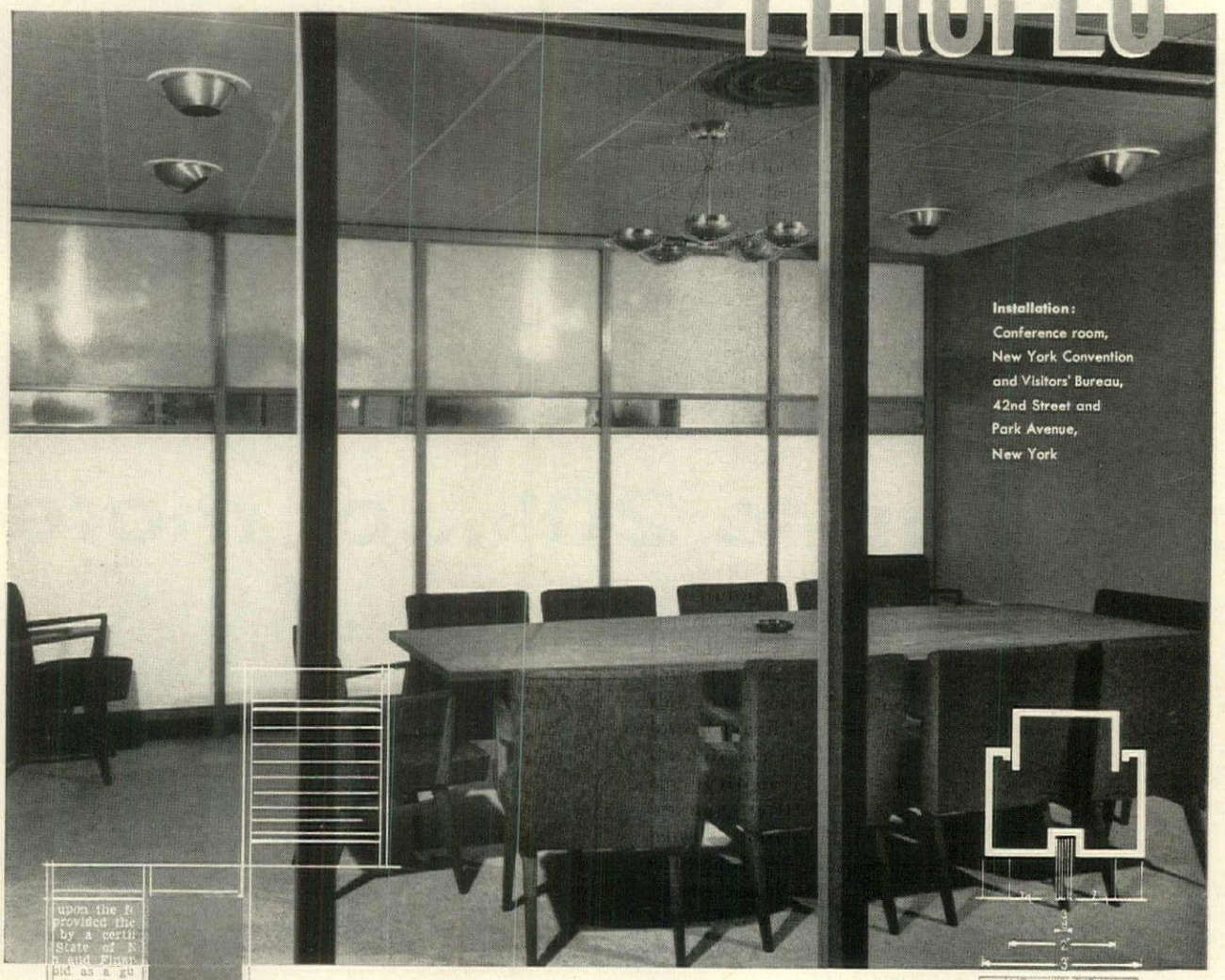
3M ADHESIVES

MINNESOTA MINING AND MANUFACTURING COMPANY • *ADHESIVES AND COATINGS DIVISION*

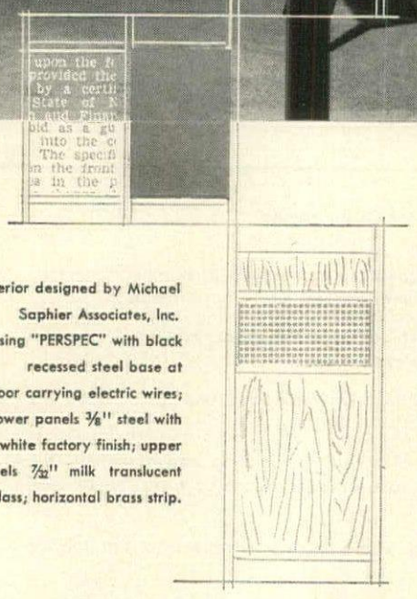
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MAKERS OF "SCOTCH" BRAND PRESSURE-SENSITIVE ADHESIVE TAPES • "SCOTCH" BRAND SOUND-RECORDING TAPE • "SCOTCHLITE" BRAND REFLECTIVE SHEETINGS • "3M" ABRASIVE PAPER AND CLOTH • "3M" ADHESIVES AND COATINGS • "3M" ROOFING GRANULES • "3M" CHEMICALS

Custom variety in pre-fab partitioning with "PERSPEC"

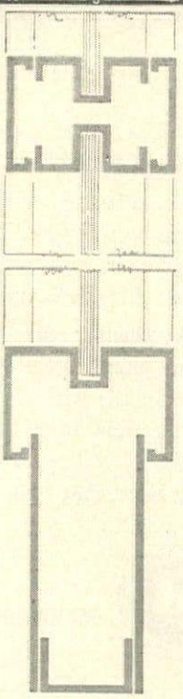


Installation:
Conference room,
New York Convention
and Visitors' Bureau,
42nd Street and
Park Avenue,
New York



Interior designed by Michael Saphier Associates, Inc. using "PERSPEC" with black recessed steel base at floor carrying electric wires; lower panels 3/8" steel with white factory finish; upper panels 7/32" milk translucent glass; horizontal brass strip.

"PERSPEC", an entirely new idea in partitioning, consists of stock pre-fabricated steel frames, carrying electric wires and allowing complete freedom in the choice of colors, forms, textures and materials for panel inserts within the frames. Different heights, widths or a horizontal strip of brass positioned at the discretion of the user add to the possibilities. "PERSPEC" offers the architect or designer all the economy and efficiency of modern steel partitions, plus variety of effects.



AETNA STEEL PRODUCTS CORPORATION

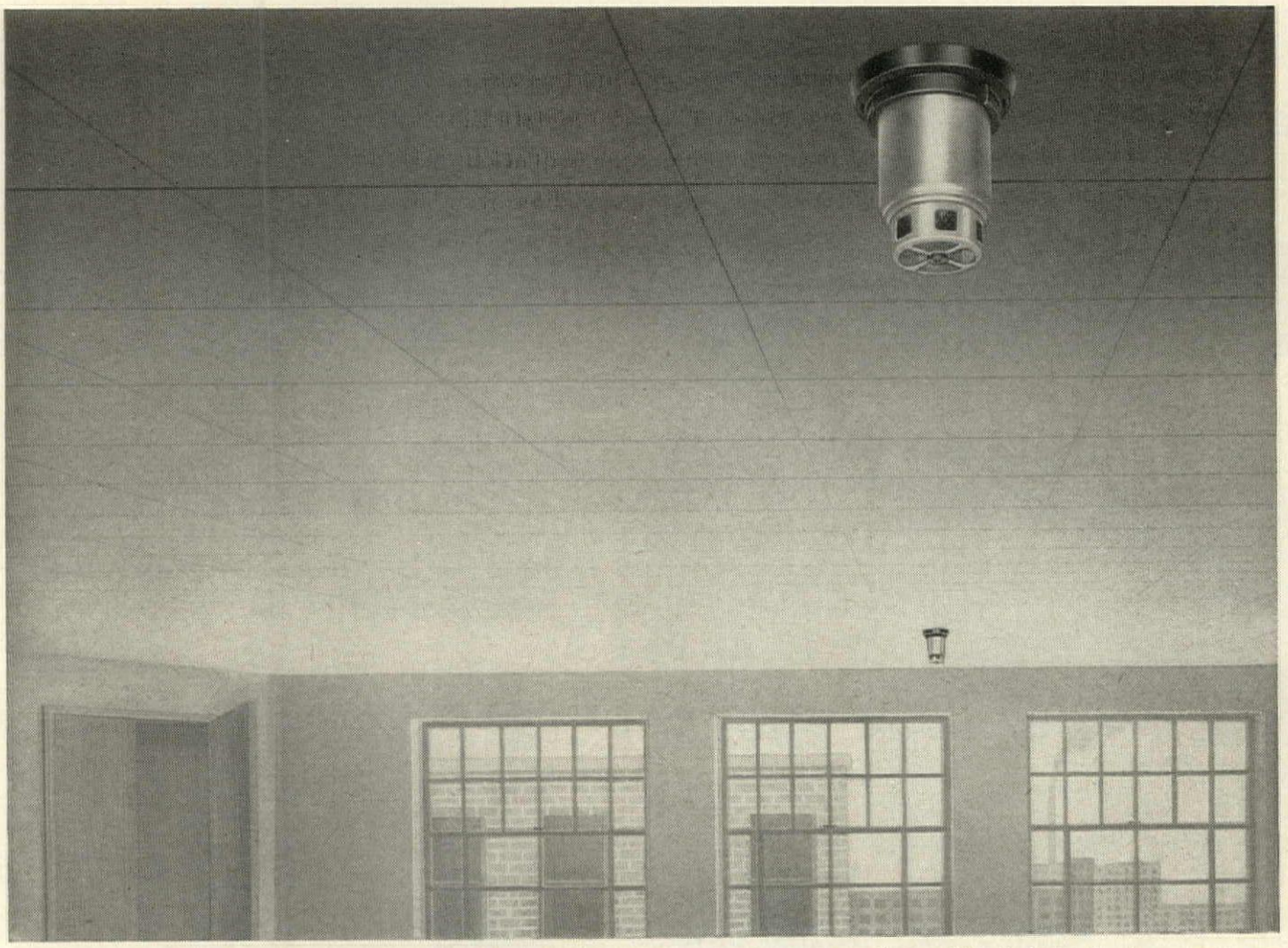
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E. J. BOYLE DIVISION
730 Fifth Avenue, New York 19, N. Y.

AETNA ALSO PRODUCES
The new Arnot PARTITION-ettes*†, modular office furniture, desks and OFFICE-ettes††. Elevator enclosures, convector enclosures. Hollow metal doors and frames. Marine joiner work and bulkheading (aluminum and steel). Ships' interior outfitters.

New, radio-active, automatic fire guard!

C-O-TWO PRE-DETECTOR SYSTEM



Each pre-detector head protects up to 3,600 square feet of area . . . harmless radio-active element utilizing ionization chamber principle quickly detects all forms of fire . . . requires only simple two-wire circuit and insignificant wall space for controls.

This completely new and positive means of spotting fire is just what you've always needed and wanted . . . detects in the earliest stage, invisible combustion gases, visible smoke, slow smoldering, as well as open flame. The C-O-TWO Pre-Detector System is simple to install, extremely economical to maintain and doesn't depend on thick smoke or heat for actuation.

As many pre-detector heads as necessary can be connected together in a single circuit and up to 16 separate circuits or spaces handled by one system. With a single circuit the pre-detector heads are connected directly to the fire indicating cabinet, while with multiple circuits the pre-detector heads are first connected to one or more space indicating cabinets capable of visually showing by number the exact location of the fire. Relays perform such functions as sounding alarms, closing fire doors, shutting down ventilation and releasing fire extinguishing systems.

The C-O-TWO Pre-Detector System has been subjected to extensive testing and carries Underwriters' Laboratories, Inc. listing, as well as Factory Mutual Laboratories approval. Proven pilot installations have been made in such diversified properties as a television station, an electric power company network analyzer room, a railroad signal tower, an airline flight training equipment room and the offices of an insurance company.

Don't take unnecessary chances any longer . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts about this new C-O-TWO Pre-Detector System today!

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PYRENE — C-O-TWO

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C-O-TWO

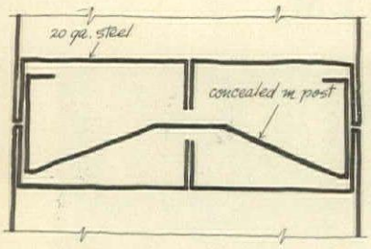
COMPLETE FIRE PROTECTION

portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

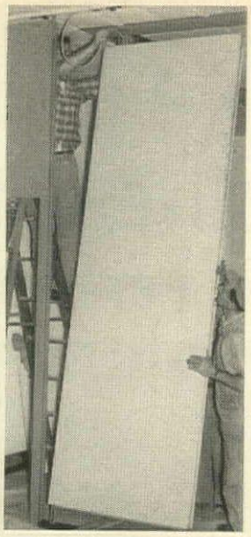
CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

PRODUCTS

Continued from p. 184







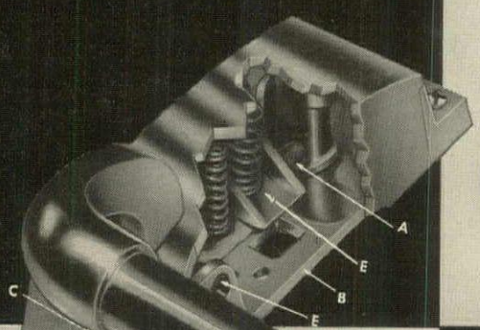
for painting. The posts lock to adjoining panels with a positive acting link plate (see drawing, p. 184). Additional panels can be connected in two, three or four directions without disturbing adjacent sections. Both the base and cornice are detailed to adjust to slight irregularities in ceiling and floor. Where the 3′ or 6′ modules are used, Aetna's stock 3′ x 7′ metal doors can be installed and moved around as conveniently as solid panels. Both vertical and horizontal members leave plenty of room for snaking BX.

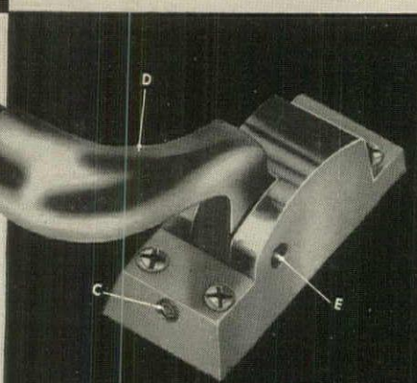
Designed to complement *Perspec* exposed frame partitions and serve as walls for executive offices and conference rooms, the *Straightline* series sacrifices some mobility for the appearance of solidity and permanence. Supporting posts are concealed and hairline seams between the mineral-core steel panels are barely visible. Cost of *Perspec*, depending on filler panel specified, ranges from about $22 to $26 per lin. ft. of partition. *Straightline* units are about $20 per lin. ft.

Manufacturer: Aetna Steel Products Corp., 730 Fifth Ave., New York 19, N. Y.

IMPROVED "Feather Touch"

PANIC EXIT DEVICE





A. Latch retracts from outside with "oilite" bearings—a feather touch feature.

B. Action stops against heavy cast base for long life.

C. Concealed bolt dog is screw jack type . . . cannot jam . . . cannot be removed.

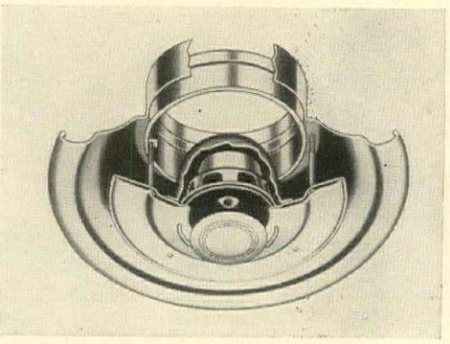
D. Extra heavy arms . . . plenty of finger clearance.

E. Rustless pivots and springs.

and still only two Moving Parts!

SARGENT & GREENLEAF INC.

ROCHESTER 21, NEW YORK

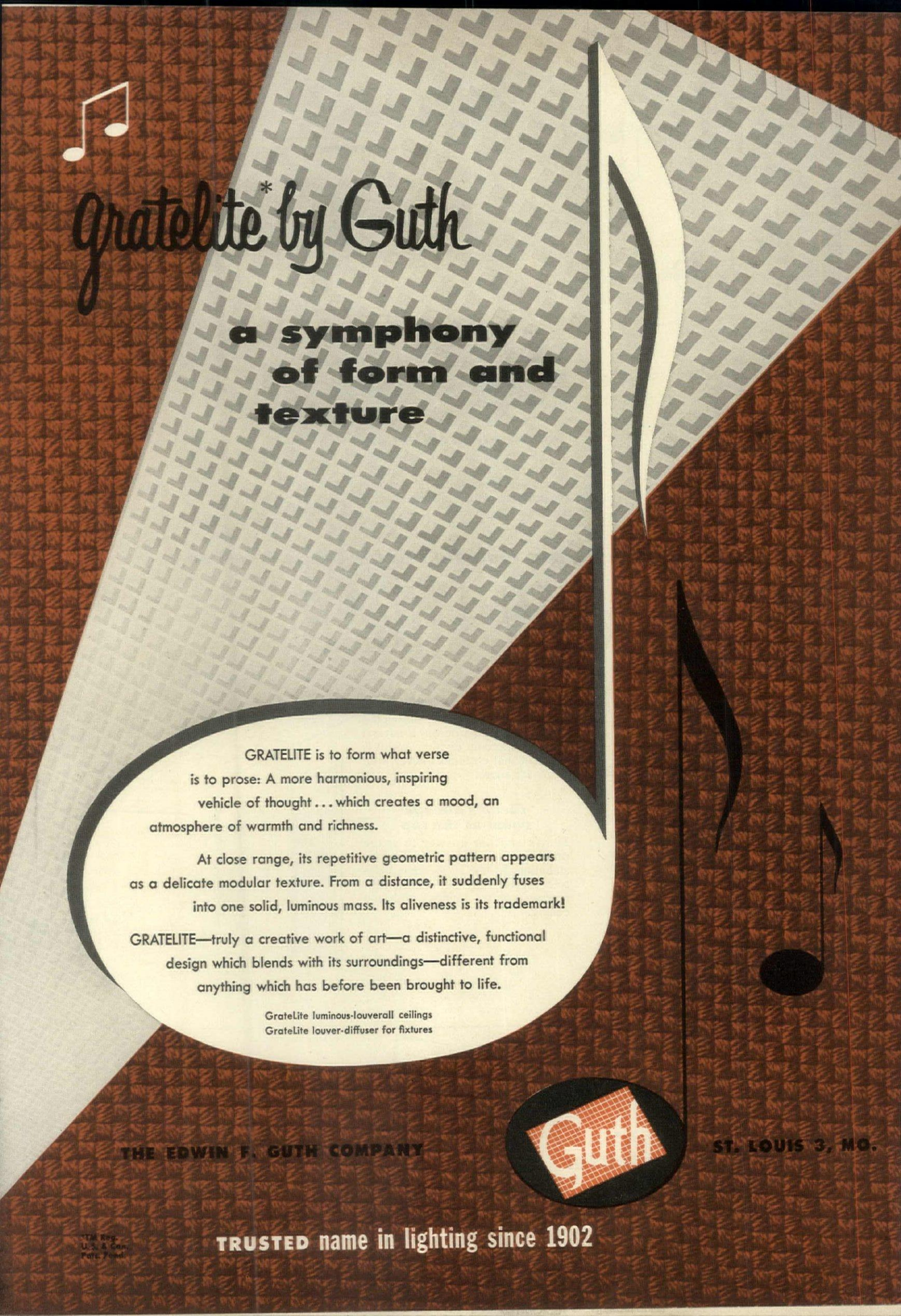


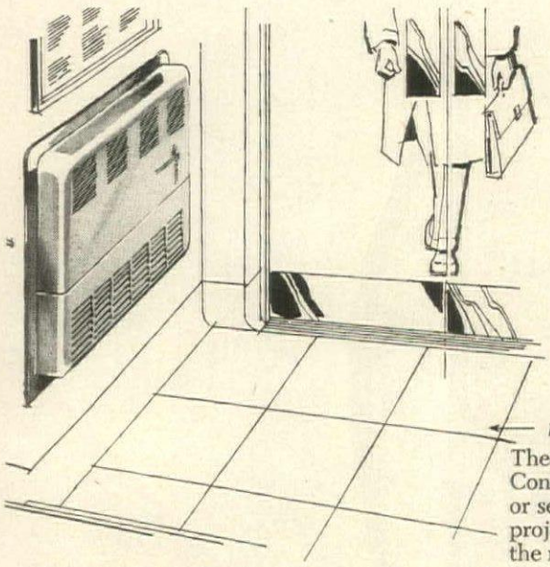
AIR DIFFUSER nests hi-fi speaker

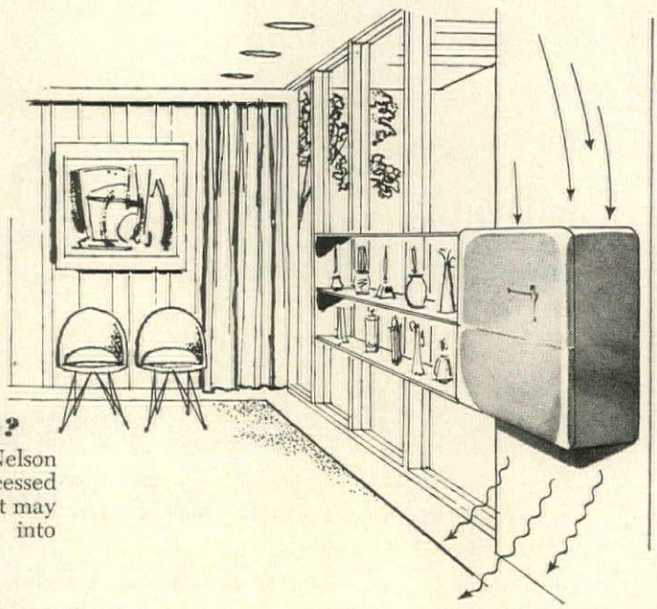
Sending out sound and air from a single source, Connor's new *SPKR* outlet with a concealed 8″ speaker is engineered for use in air terminals, cafeterias, assembly plants and other areas calling for ceiling air delivery and piped music or p.a. systems. The combination diffuser-loudspeaker is sure to please designers and building owners who like ceilings punctured with as few objects as possible. In tests, the doubling up of functions has proved strategic for both: the speaker does not have to buck air streams discharged from other directions and its sound quality is not distorted by the air flow; nor is the capacity or performance of the diffuser affected by having the speaker inside. *SPKR* models are available in neck sizes of 14″, 16″ and 18″ at $70, $85 and $95. A damper cost $10 more per unit. Any extended range 8″ speaker may be specified.

Manufacturer: Connor Engineering Corp., Danbury, Conn.

continued on p. 192


Gratelite* by Guth
a symphony of form and texture
GRATELITE is to form what verse is to prose: A more harmonious, inspiring vehicle of thought . . . which creates a mood, an atmosphere of warmth and richness.
At close range, its repetitive geometric pattern appears as a delicate modular texture. From a distance, it suddenly fuses into one solid, luminous mass. Its aliveness is its trademark!
GRATELITE—truly a creative work of art—a distinctive, functional design which blends with its surroundings—different from anything which has before been brought to life.
GrateLite luminous-louverall ceilings
GrateLite louver-diffuser for fixtures
Guth
THE EDWIN F. GUTH COMPANY
ST. LOUIS 3, MO.
*TM Reg. U. S. & Can. Pats. Pend.
TRUSTED name in lighting since 1902





no space to spare?

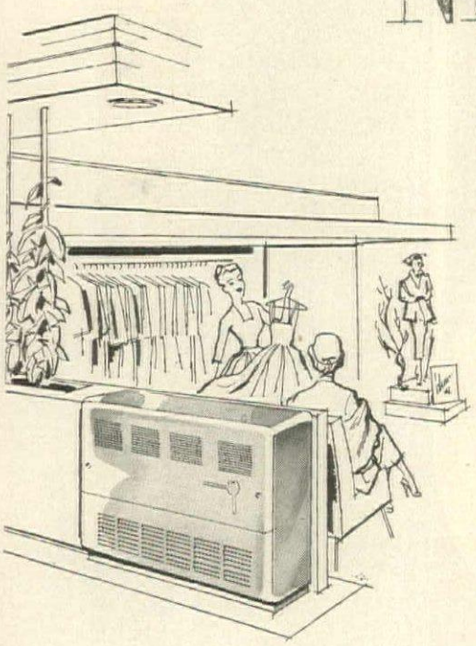
Then think about a Herman Nelson Console Heater either fully recessed or semi-recessed in the wall! It may project as little . . . or as far into the room as you wish.

hot idea for cold floors →

It's easy to assure warm floors with an inverted Console Heater installation. Even concrete slab floors stay comfortable when blanketed with Herman Nelson heat.

the herman nelson console heater lends itself to

NEW IDEAS

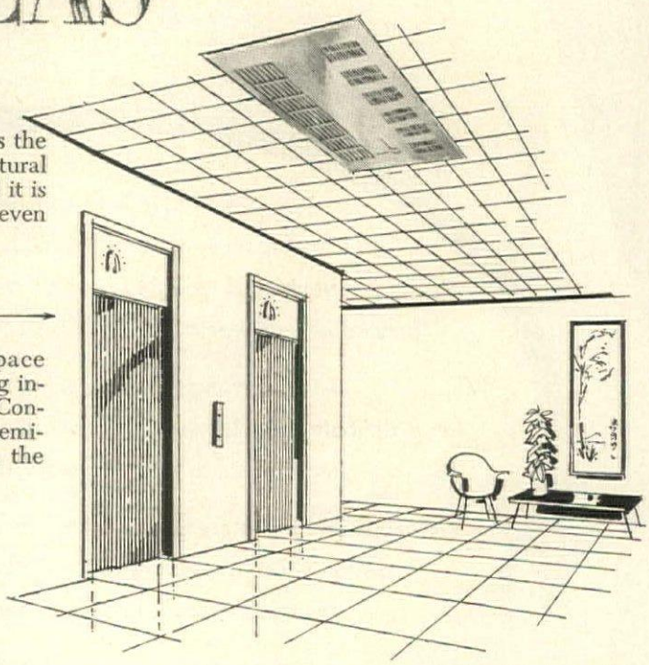


beauty treatment ←

Its crisp modern beauty makes the Herman Nelson Console a natural for use as a room divider. And it is so silent that customers never even know it's there!

there's always room at the top →

Here's another answer to space problems . . . a recessed ceiling installation. In this application, Console Heater may be either semi-recessed, or set in flush with the ceiling.



AAF herman nelson

American Air Filter

COMPANY, INC.

LOUISVILLE, KY.



Now Ready!

Complete information and specifications on the beautiful new Herman Nelson Console Heater. Mail this coupon today!

AMERICAN AIR FILTER COMPANY, INC.
427 Central Avenue, Louisville 8, Ky.

Please send me my free copy of Bulletin No. 727 immediately.

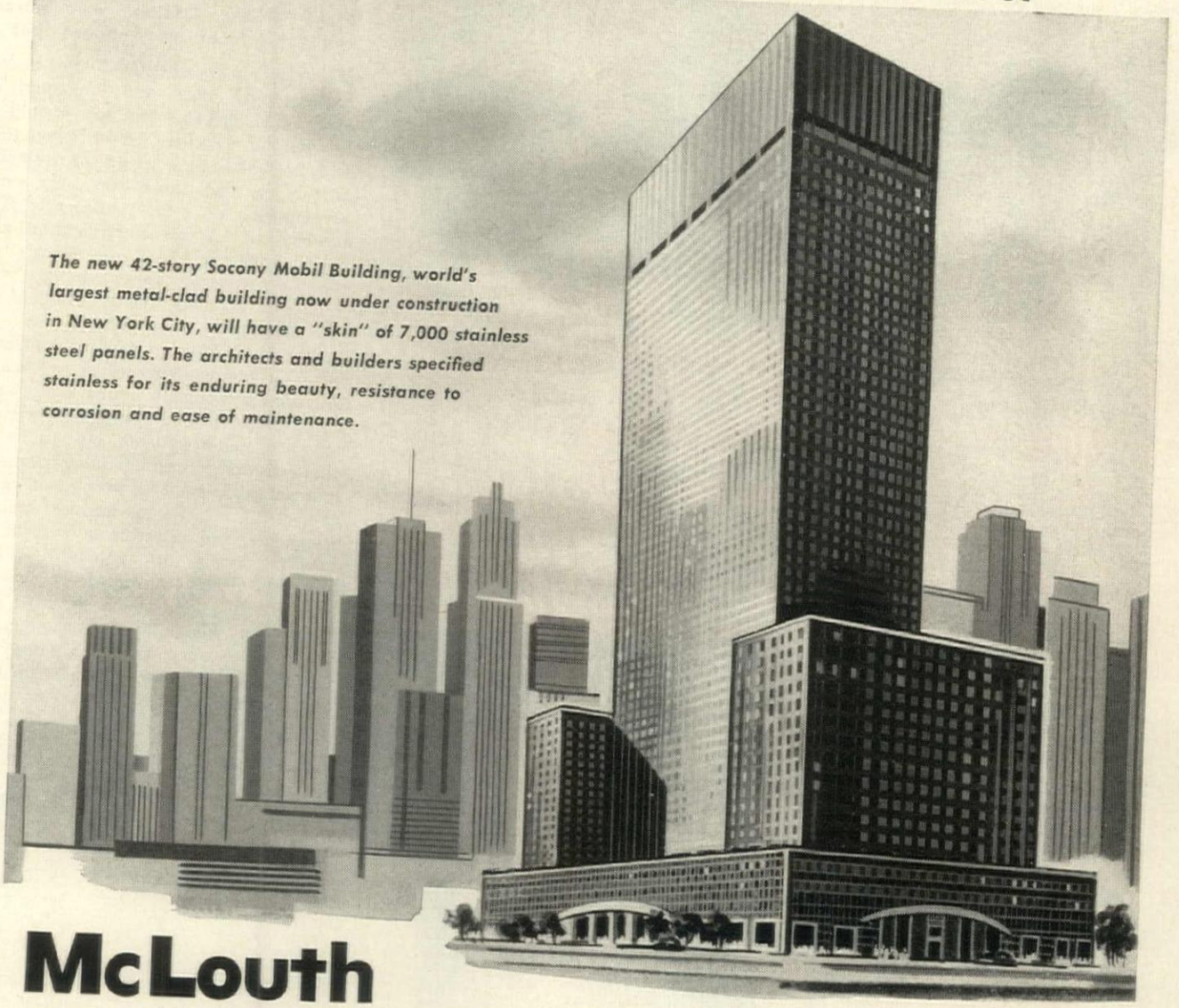
NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

modern design specifies stainless steel

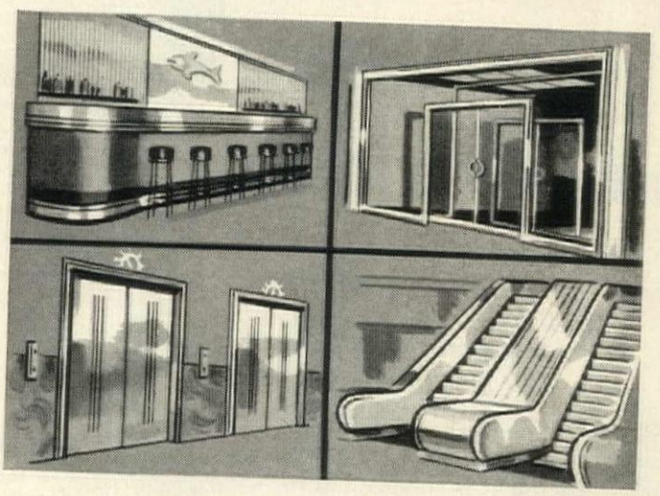


The new 42-story Socony Mobil Building, world's largest metal-clad building now under construction in New York City, will have a "skin" of 7,000 stainless steel panels. The architects and builders specified stainless for its enduring beauty, resistance to corrosion and ease of maintenance.

McLouth
STAINLESS
Steel
for buildings

In fixtures, trim, curtain walls and hundreds of other applications you will profit by using McLouth Stainless Steel.

For the product you make today and the product you plan for tomorrow specify McLouth high quality sheet and strip Stainless Steel.





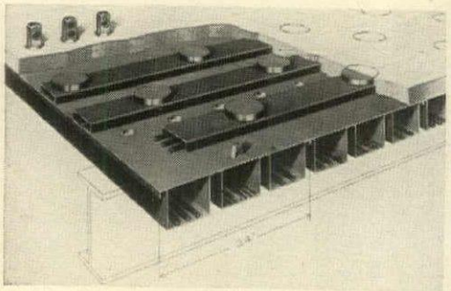
McLOUTH STEEL CORPORATION

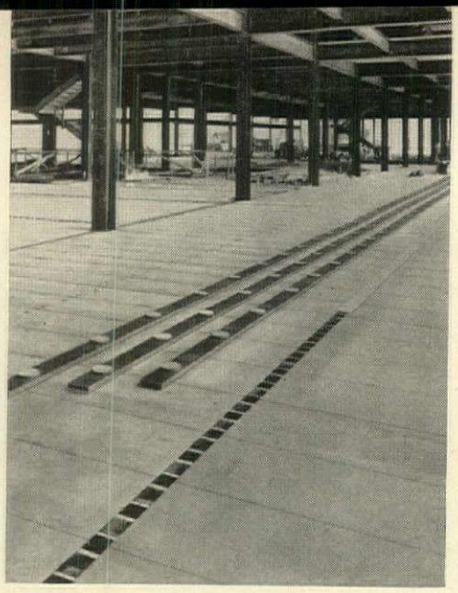
Detroit, Michigan

MANUFACTURERS OF STAINLESS AND CARBON STEELS

PRODUCTS

Continued from p. 188

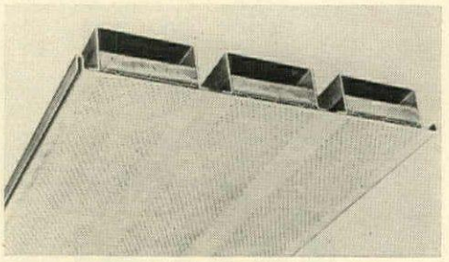




FLAT-FACED DECK: wire circuits reachable from every square foot

Mahon's 6"-wide steel *Cel-Beams* make up high-strength floor and long-span deck systems which put a low dead-weight burden on the structure. Even when topped with 2½" slab, total weight of the finished floor is less than the live load the sections are engineered to carry. Recently Mahon incorporated *Nepco* electrification as an optional feature of its steel floors. Using the *Cel-Beams* as raceways with transverse header ducts, the prewired *M*-floors provide power accessibility at every square foot. Floor service fittings can be installed wherever needed at any angle to the raceways, and 4" hand holes are allowed for quick and comfortable wire pulling and cable splicing operations. For years to come, unpredictable changes in interior layouts should present no problem of spotting circuits for business machines, telephones and intercom equipment.

With wiring or without, *Cel-Beams* boast the design convenience of interlocking flat top plates which serve as an unbroken deck for materials storage and safe footing for workmen. The same *M*-sections may be mounted bottoms up to create a smooth ceiling. For the latter kind



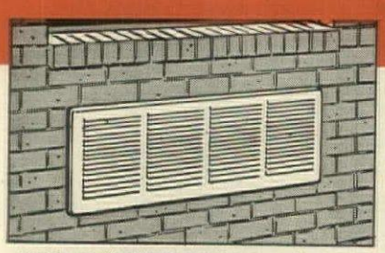
of application, plates can be furnished perforated, with sound absorbent blankets inside the beams.

In addition to the usual floor and deck applications, lightweight *Cel-Beams* are suitable in many instances for adding floors to existing buildings, and for cantilevering balconies and canopies. Members and plates are available in various metal gauges, and the *Cel-Beams* are supplied in 1½", 3", 4½" depths so that the most economical combinations can be selected for a specific floor, roof, combination roof acoustic-ceiling, or overhang. Sections are produced with one, two, or three 6"-wide beams spaced not more than 6" apart so that the *M-Floor* is strong enough to take the heft of a concrete pour without damage to its top plate. Typical price for a 4½"-deep *M-2* section of 18-ga. metal would be about $1.05 per sq. ft. F.O.B. Detroit and a 12-ga. *M-3 Cel-Beam* floor 4½"-deep, about $2.00. Complete engineering data covering allowable loads and Underwriters Laboratories fireproofing requirements are available from Mahon.

Manufacturer: The R. C. Mahon Co., Detroit 34, Michigan

continued on p. 198

AT LAST! a BUILT-IN air conditioner with NO UNSIGHTLY "OVERHANG" INSIDE or OUT!



NEAT OUTSIDE GRILL—nothing to mar beauty, no unsightly "overhang" inside or out!



LOOKS LIKE A HANDSOME GRILL! Can be installed in *one* room or *every* room in any type of construction!

revolutionary low-cost

LEWYT

BUILT-IN wall air conditioner

NOW! DESIGN BUILT-IN AIR CONDITIONING INTO HOMES, APARTMENTS, HOTELS, ETC., FOR...

- Less than the cost of window units!
- Less than HALF the cost of a central system!

NOW, LEWYT brings you a totally new concept of BUILT-IN air conditioning! Each unit is complete in itself, fits into any outside wall. Only 15" deep, there's no unsightly "overhang" inside or outside to mar the architectural beauty of your design! There are no ducts, no "window problems!"

ONLY LEWYT HAS ALL THESE BIG "EXTRAS!"

- Sold direct from factory to builder!
- Only 15" deep, 14-5/8" high, 32-7/16" wide!
- Individual 2-speed control and built-in thermostat!
- Quiet! Choice of cooling capacities!
- 5-year warranty! UL approved!
- Reverse-cycle pump for heating — optional!

Write today for specifications and full details!

LEWYT AIR CONDITIONER CORPORATION • 57th St. and 1st Ave., Brooklyn 19, N. Y.

BRIXMENT

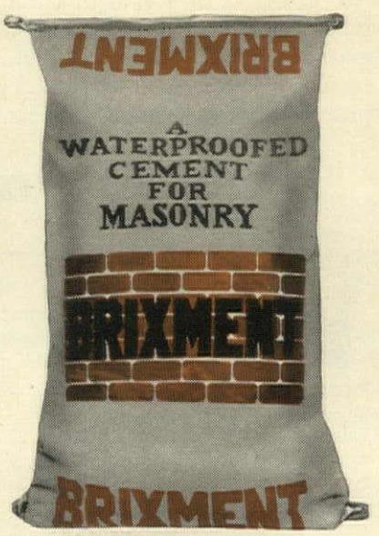
Better Mortar for Blocks



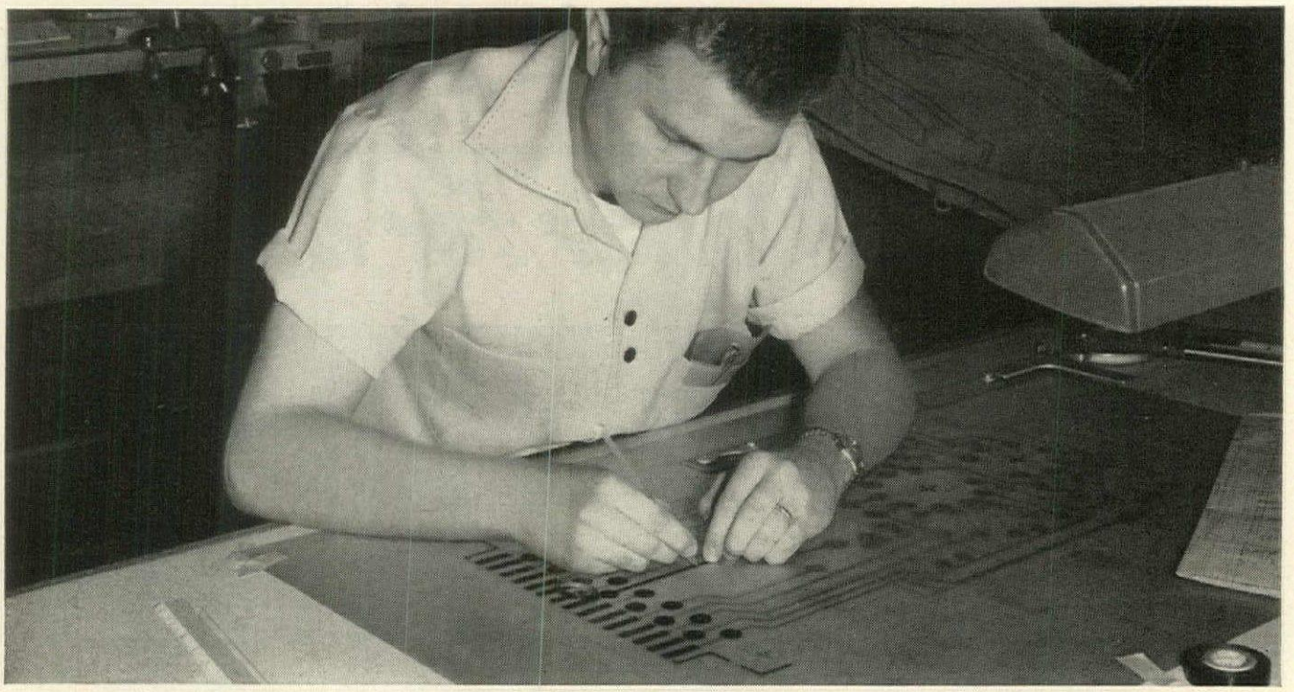
WHY IS GOOD MORTAR IMPORTANT?

Because of their size and weight, concrete blocks require mortar with "body", plasticity and water-retaining capacity. Brixment meets all these requirements. It has the *body* necessary to support the weight of the unit and hold it up to the line. It has the *plasticity* necessary to prevent the mortar from falling off the long head joint, while the block is being placed in the wall. It has high *water-retaining capacity*, which gives the bricklayer more time to shift and adjust the block to its final position before the mortar stiffens.

It is the combination of these characteristics that makes Brixment the leading masonry cement for concrete block as well as for brick.



Louisville Cement Company . . . Louisville 2, Kentucky



Short cuts speed printed-circuit design at Brush Electronics Co.

"3-day job"...done in 3 hours

Brush Electronics Co., a Division of Clevite Corp., Cleveland, Ohio, finds countless uses for photographic materials and techniques in designing more than 700 products.

Take the draftsman working on that printed-circuit diagram, for example. The original practice was to draw such circuits in ink on heavy Bristol board.

Now, the job is done in a fraction of the time by positioning precut circles and lines, with adhesive backing, on a form. This is reproduced on Kodagraph Autopositive Film, a positive copy being obtained directly without a negative step. This reproduction—with dense black photographic lines on a translucent base—is sent to the vendor who makes the printed circuits.

Brush has also found that duplicate tracings, made quickly and economically on roomlight-handling Kodagraph Autopositive Paper or Film, are the key to further savings when drawings must be revised, or vendor prints reproduced. Such duplicates are continually being used in place of originals for reference and print making . . . are protection against possible loss or unavailability of the originals.

And Brush further streamlines drafting and engineering activities with the help of other Kodak materials—uses Kodagraph Contact Fine-Line Paper for revising and combining drawings, and making high-quality offset plates . . . uses Kodalith Film in preparing "pictorial" assembly drawings, reduced-size drawings, handbook pages, graphs. *Sometimes four or five materials are used on one job, for top-quality results and savings at every step.*

To learn the ways Kodagraph and other Kodak reproduction materials can serve you, just mail coupon below, or get in touch with your local blueprinter.

Kodagraph Reproduction Materials



New booklet is jam-packed with valuable tips on saving drafting time, protecting drawings, getting better prints.

—MAIL COUPON FOR FREE BOOKLET—

206

EASTMAN KODAK COMPANY
Graphic Reproduction Division, Rochester 4, N. Y.
Gentlemen: Please send me a free copy of your new booklet on Kodagraph Reproduction Materials.

Name_____ Position_____

Company_____

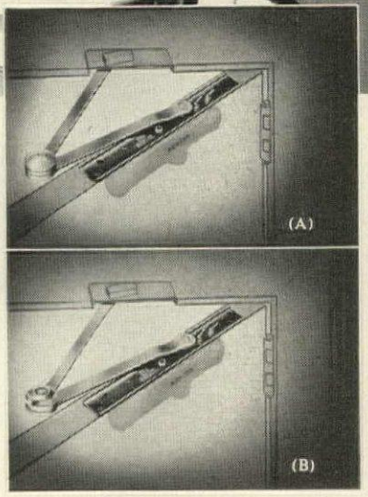
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Kodak
TRADE-MARK

NORTON "INADOR" ... a modern door closer keyed to modern design





The complete INADOR mechanism is concealed in a mortise in top rail of door . . . 4 sizes to meet every need . . . all models available with (A) regular arm or (B) holder open arm.

Effective concealment for trim modern beauty . . . plus the rugged reliability only liquid closers provide!

You can be sure of complete harmony of design between doors and door closers when you specify *Norton Inador*. You can also be sure your clients will receive all the reliability, durability, low maintenance and precision workmanship so characteristic of all Norton Door Closers. For fully illustrated descriptions and engineering data on this and other models, consult the current Norton catalog. Write for one today if you don't already have a copy.

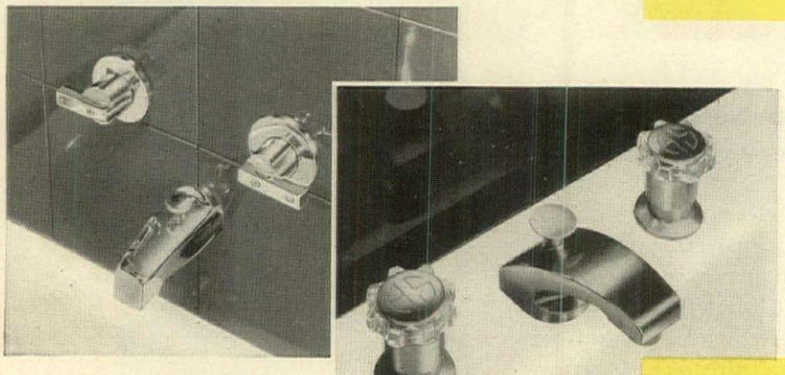
NORTON® 75 years of leadership in door closers

DOOR CLOSERS Dept. AF-125, Berrien Springs, Mich.

Picture studies in function and



a



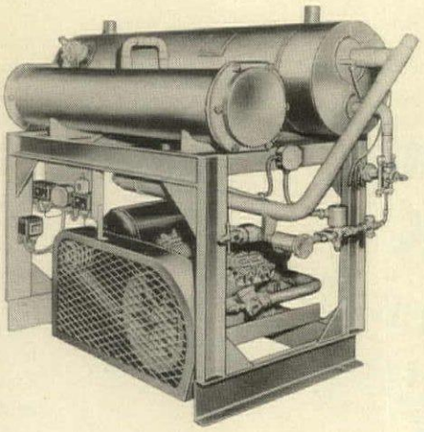
b

BIG, NEW Merrilyn Counter Top Lavatory. This beautiful 28″ x 20″ American-Standard lavatory is generous in size, easy to install and built to last. Made of genuine vitreous china, it has twin soap dishes, front overflow, anti-splash rim . . . comes in all the popular American-Standard colors. This extra large counter top lavatory gives that added convenience so desirable in hotels, motels and institutions, as well as homes, and is available with either Monogram or Quality line fittings.

New Fittings to Meet Your Every Requirement. Two smart new lines of American-Standard fittings designed to meet the highest quality standards. They both introduce the NU-RE-NU valve assembly for long, dependable service and self-aligning escutcheons for trim, easy installation. The MONOGRAM line features satin chrome finish, handles in clear or five beautiful colors, and can be personalized with the owner's initials. The QUALITY line has a trim, modern appearance and is finished in non-tarnishing, polished Chromard.

design by AMERICAN-Standard

c



Water Chillers for All Requirements. American-Standard offers a complete line of water chillers to meet all cooling requirements. Both water-cooled and air-cooled water chillers come packaged for quick, easy installation. Designed with carefully integrated components and fully tested, American-Standard Water Chillers assure efficient, economical operation. Small chillers for use in homes and small commercial buildings are available in 2, 3 and 5 h.p. capacities. For large buildings you can get water chillers ranging in size from 7.5 to 75 h.p.

These are just a few of the many plumbing, heating, cooling and kitchen products made by AMERICAN-Standard PLUMBING AND HEATING DIVISION, American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pennsylvania.

AMERICAN-Standard

d

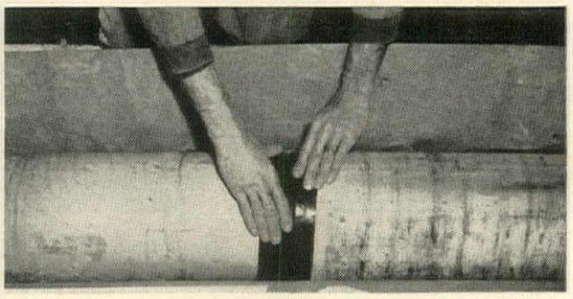
Individually Controlled Room Comfort. Guests in Pittsburgh's William Penn Hotel are always comfortable because they "dial their own comfort" with American-Standard Remotaire heating-cooling units. Operating from a central boiler-chiller plant, these individually controlled room conditioners automatically heat or cool, filter, dehumidify and gently circulate air throughout the room. Remotaire Room Conditioners are equally adapted for new or modernized structures. Vertical-type units may be installed free-standing or recessed within custom-built enclosure; horizontal-type units may be installed at the ceiling, either concealed or exposed.



PRODUCTS

Continued from p. 192





FIRE-CLAY DUCTS imbedded in slab for perimeter air delivery

Permanent, moisture-proof and odorless, *Ceramiducts* are fabricated of vitrified fire-clay in a complete line of shapes for use in concrete slab perimeter and radial heating systems. The shock resistant ducts are produced in 3', 6' and 9' straight lengths as well as in various *L's*, *T's* and *Y's* in 6" to 12" diameters, and delivered with all curves, and jointing material necessary for each specific job. Fittings are installed over a crushed stone or gravel base and are connected quite simply with thermoplastic tape which is said to improve its bond strength with age. Each section has a kerfed groove which can be chipped out with a hammer or bar to take a register of any size at any location. During the pour, the clay ducts will not warp or twist. Nor do they have to be anchored with tie wires or ground stakes to keep them from floating. Covered with a cured 2½" slab of mesh-reinforced concrete, the vitrified *Ceramiducts* can take considerable loads and impacts. Their smooth inner surface assures a steady, even air flow and eliminates turbulence. Systems can be engineered so that a large portion of heat is conducted through the concrete floor before the warmed air reaches the registers to produce an effective balance of radiated and convected heat. Estimated cost of *Ceramiduct* delivered to the job is 13.2¢ per sq. ft. of floor area for a perimeter system and 8.2¢ per sq. ft. for a radial layout. The rugged clay units can be stored outdoors in any kind of weather without mishap.

Manufacturer: Straitsville Brick Co., New Straitsville, Ohio

World's Largest Structural Steel Dome Chooses POREX for Insulation, Sound Control, Fire Protection at Lowest Cost





City of Charlotte, N. C., Coliseum and Auditorium
Structural Steel Dome: 322 ft. diameter
Architect: A. G. Odell Associates
Engineer: Severud, Elstadt, Krueger
Contractor: Thompson-Street Co.
Over 150,000 sq. ft. of POREX used for roofing and wall furring.

The inside of the POREX slab is the actual ceiling, acoustically color-coated to match painted steel—no further finishing needed.

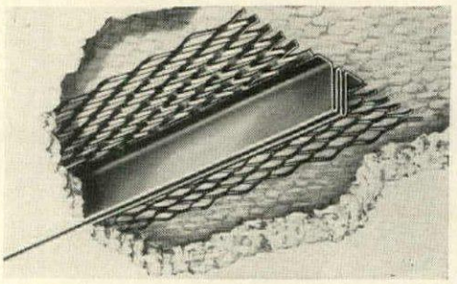
For roof decks of monumental buildings, architects quite naturally specify POREX. What other precast concrete slab offers such marked savings in labor cost, *plus* all these quality features:

- STRUCTURAL STRENGTH
- NAILABILITY
- HEAT INSULATION
- LIGHT WEIGHT
- INCOMBUSTIBILITY
- SOUND CONTROL

Plain POREX for short spans and Composite POREX or Plain POREX on subpurlins for long spans are ideal for Auditoriums, Gymnasiums, Schools, Armories, and many other uses. For floors, precast lightweight concrete channel slabs and concrete plank are available. Send us your specifications.



POREX MANUFACTURING CO., North Arlington, N. J.
Precast lightweight concrete products since 1920
New Jersey Tel. KEarny 2-9090 New York Tel. BOwlg. Grn. 9-0517

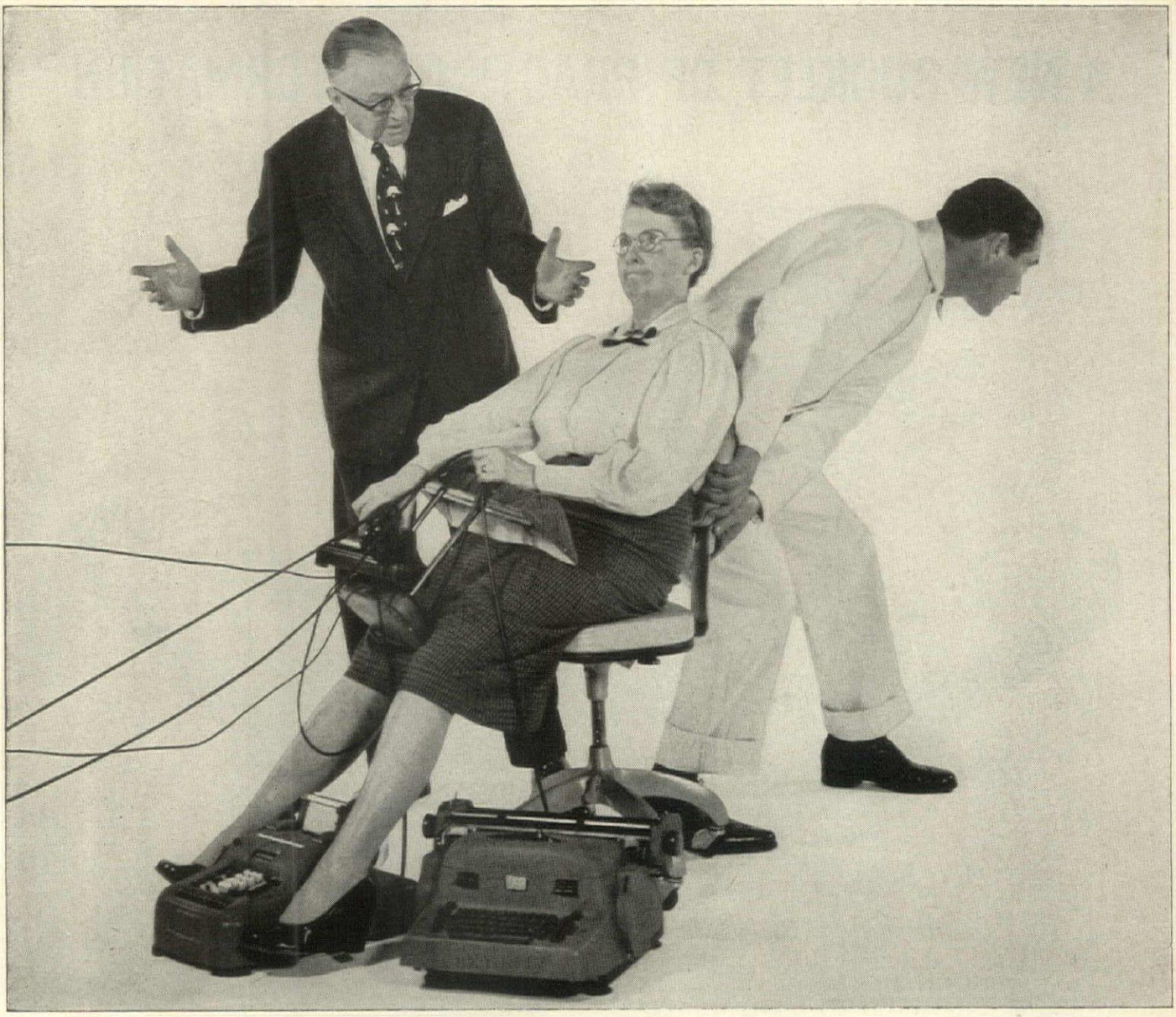


EXPANSION JOINT reduces cracking in stucco and acoustical plaster

Designed to give and take with the movements of acoustical plaster or exterior stucco, Penn Metal's new expansion joint absorbs stresses and strains that are common causes of cracking in these two kinds of construction. The joint also acts as the work stop in acoustical plaster ceilings, a juncture ordinarily improvised by the mechanic. Made in 10' lengths, of 26-ga. galvanized steel the joint is available with ½" or ⅞" grounds at about 12¢ per lin. ft.

Manufacturer: Penn Metal Co., Inc., New York City

continued on p. 202



Miss Foster hates to lose her connections

Moving can be a hardship on employees if electrical outlets are not conveniently located.

Electrical availability for dictating machines, telephones, intercoms, and other electrically operated equipment can be quite a problem when office space is relocated. Whether you plan or build offices for your own use or for rental, it's good business to plan to have enough electrical outlets to provide for efficient space utilization — without costly replacement work and unsightly makeshifts. The answer to electrical flexibility is General Electric Q-Floor wiring, the system that makes every square foot of floor space available for outlets.

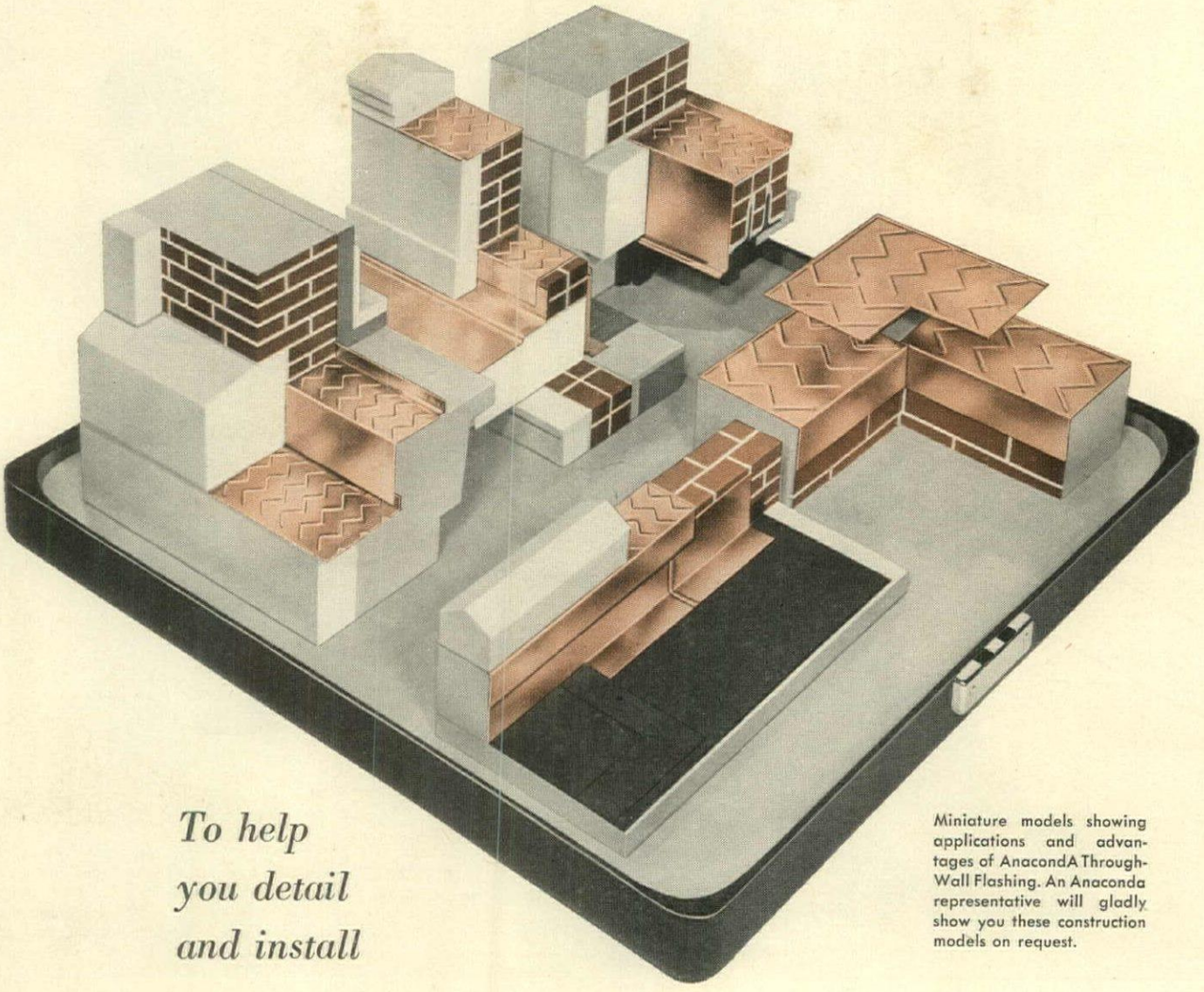
The General Electric Q-Floor wiring system is designed for installation with cellular steel subflooring. Every cell is a raceway for present and future circuit requirements. No costly alterations, no litter, no tie-up of space, no matter how often or how much your electrical requirements change. You simply drill a hole in the floor and pull wires to connect an outlet. Installations in the Celanese Office Building in Charlotte, N. C., in institutions like Central Power and Light Company's Service Center in Corpus Christi, Texas, and commercial buildings like the ultramodern Prudential Insurance Company Building in Chicago are proving that Q-Floor wiring gives the modern office complete electrical flexibility.

For more information on General Electric Q-Floor wiring systems, call your G-E Construction Materials district office or write to Section C51-128, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

Progress Is Our Most Important Product

GENERAL ELECTRIC

A NEW BOOKLET OF PRACTICAL INFORMATION



To help you detail and install

Miniature models showing applications and advantages of AnacondA Through-Wall Flashing. An Anaconda representative will gladly show you these construction models on request.

ANACONDA through-wall flashing

The greatest danger of water penetration in masonry construction is above the roof line. The new edition of "Anaconda Through-Wall Flashing" concentrates attention in this critical area. This publication, with its clear, detailed illustrations, shows you how you can provide complete protection, easily and economically. And you, in turn, get the protection of sound engineering when you use AnacondA Through-Wall Flashing, in these ways:

1. No Lateral Movement. The high zigzag corrugations provide a complete bond in the mortar and equally resist movement in all lateral directions.

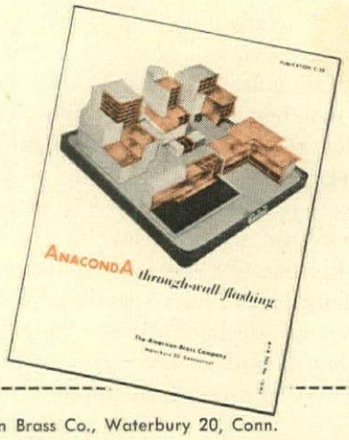
2. Precision-Stamped Integral Dam. Runs throughout length of flashing, is the full height of corrugations—assuring a uniform installation and reducing possibility of error.

3. Flat Selvage For Neat, Sharp Bends. It's easy to form counterflashing or lock to adjacent sheet metal without distortion. Make bends on the job or in the shop on a regular bending brake.

4. Complete Drainage In Desired Direction. The combination of the accurately formed dam, uniform corrugations and flat selvage give assurance that AnacondA Through-Wall Flashing will drain itself dry on a level bed — minimizing the possibility of wet walls and frost damage.

5. Easy, Watertight Endwise Locking. Merely nest one or two corrugations, overlapping adjacent lengths, even with selvage pre-formed. Water will not rise over corrugations. If desired, the joints can easily be soldered because of the overlapping *flat* surfaces. 5555

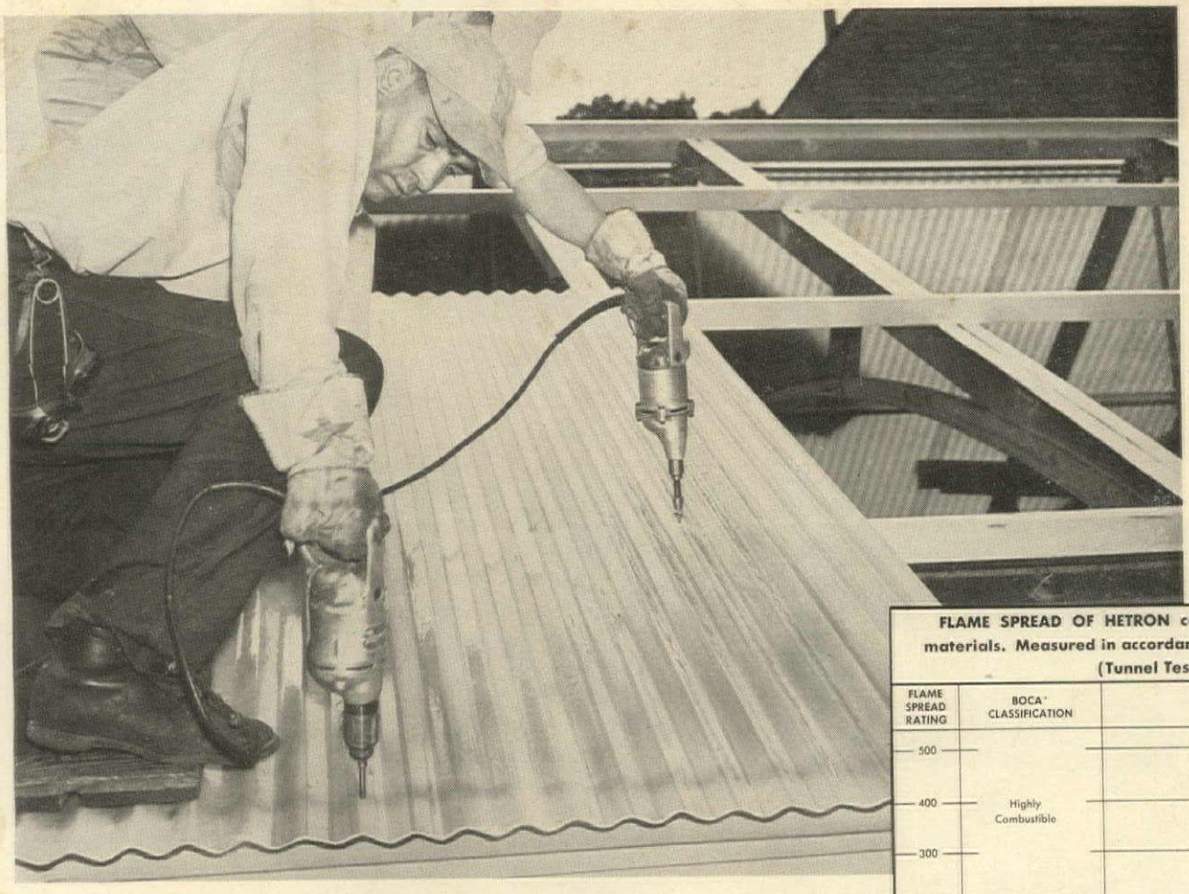
FREE!
Send for this new publication today.

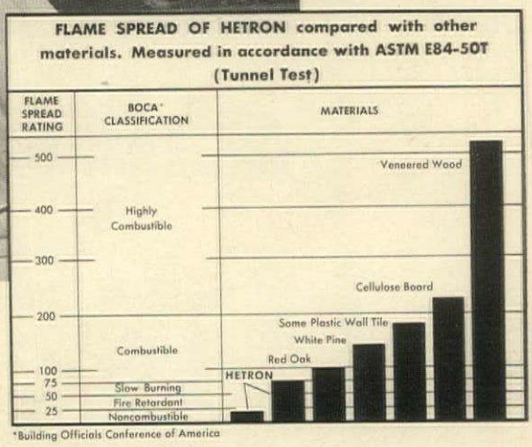


Write to

The American Brass Co., Waterbury 20, Conn.

ANACONDA® SHEET METAL





Here's why you can use HETRON® polyester sheet practically anywhere

IN THIS TEST . . . samples of the material 25 feet long are exposed to a hot flame within a wind tunnel, under strictly controlled conditions permitting observation and accurate measurement of rate of flame travel, fuel contribution, and smoke density.

Now you can safely specify polyester-fiber glass sheet, wherever you want to use its beauty and strength—even where codes restrict use of conventional polyester sheet.

A number of fabricators now offer glass-reinforced sheet made with HETRON fire-resistant polyester resin.

Flame resistance is chemically locked into this resin. The result is lasting stability. There is no loss of mechanical properties, as may occur when flame resistance is obtained with additives alone.

Won't feed fire

HETRON sheet, properly formulated, does not support combustion. It will not burn except at the point where a hot flame is applied directly, and snuffs out as soon as the flame source is removed.

Sheet made from HETRON shows flame spread ratings as low as 20 (compared with 100 for red oak), by "Tunnel Test" ASTM E84-50T.

Sheet has U/L listing

Typical flame spread ratings of 20 to 75 for various formulations, so tested, place HETRON sheet in a bracket equivalent to the Building Officials Conference of America classifications of "slow burning," "fire retardant," or "noncombustible." Fuel contribution ratings of HETRON are also extremely low.

Corrugated and flat sheet is commercially available with Underwriters' Laboratories listing and label.

Where to use HETRON

Most code people require specific flame spread data on polyester-fiber glass sheet before it can be approved for:
1. General glazing. **2.** Wall siding and translucent roofing in industrial buildings. **3.** Skylights. **4.** Partitions. **5.** Luminous ceiling and wall panels. **6.** Lighting and other decorative fixtures. **7.** Bathroom accessories.

When you specify HETRON-based sheet for these and other uses, you can be sure of having the precise flame spread data which form the basis for acceptance in practically every case.

We'll be glad, of course, to put you in touch with fabricators who can supply corrugated and flat sheet, louvers, expanded panels and other shapes made with HETRON. Just write us for their names, and for complete data file on HETRON resins.

1905—Half a Century of Chemicals
From the Salt of the Earth—1955

HOOKER ELECTROCHEMICAL COMPANY
54 UNION STREET, NIAGARA FALLS, N. Y.
NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES

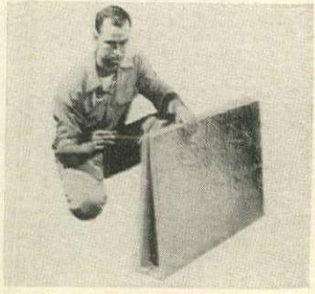
HOOKER® CHEMICALS

5-2233

PRODUCTS

Continued from p. 198







So right for the job — so right on the job



FESCO ROOF DECK INSULATION BOARD

NOTE the true-fit corners — tight joints — scuff and dent resistant — a continuous shield against fire or moisture.

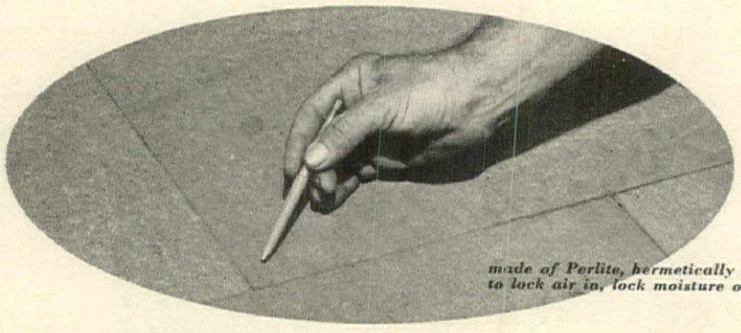
FIRE-PROOF—Flame-spread factor only 20.5, smoke contribution factor 0.

STRUCTURALLY STRONG — In compresssion tests Fesco Board withstood 140 lbs. p.s.i., and 55 lbs. p.s.i. of transverse pressure.

INSULATING VALUE — K-factor of .285 @ 0° F and .295 to .31 at 75° F.

LIGHTWEIGHT—Fesco Board units (1" x 24" x 48" or 1" x 24" x 36") weigh approximately .8 lbs. per square foot.

MOISTURE RESISTANCE DATA — Tests show only .5% absorption in two-hour period; 1.4% in 24 hour period and less than 1/4 of 1% expansion from 0 to 100% relative humidity.



made of Perlite, hermetically sealed to lock air in, lock moisture out

F. E. SCHUNDLER & CO., INC., 504 Railroad St., Joliet, Ill.

FOLD-UP BAFFLES dim din of factories and gyms

Reducing reflected noise by as much as 60%, L.O.F.'s *Microlite* lightweight acoustical baffles of resin-bonded glass fibers cost little and are literally a snap to install. The $1.50 units are shipped flat and folded on score marks into pie-shaped wedges 2′ wide, 3′ long and 6″ across at bottom. Engineered for factories, indoor swimming pools, roller skating rinks and other areas in which noise reaches physical fatigue levels, the simple wire-hung baffles are especially applicable where existing ducts, sprinkler and light fixtures make continuous acoustic ceiling treatments impractical. Incombustible and rotproof, the *Microlite* baffles will not dust or crumble, and are available with a cleanable, light reflective foil sheath as well as unfaced.

Because of their tapered shape and the millions of long random fibers, the baffles are reported to break up both low and high frequency vibrations and trap more aggravating noises, dollars for decibels, than any other incombustible sound absorber. Clipped into shape, the baffles can be attached to wires directly over the noise source (such as over pins in a bowling alley) or can be strung up high in an assembly plant to catch reflected sound. Hung in continuous runs on wires 4′ o.c., the *Microlite* baffles give the entire ceiling a sound absorbing efficiency of 67%; spaced 3′ o.c., efficiency steps up to 78%.

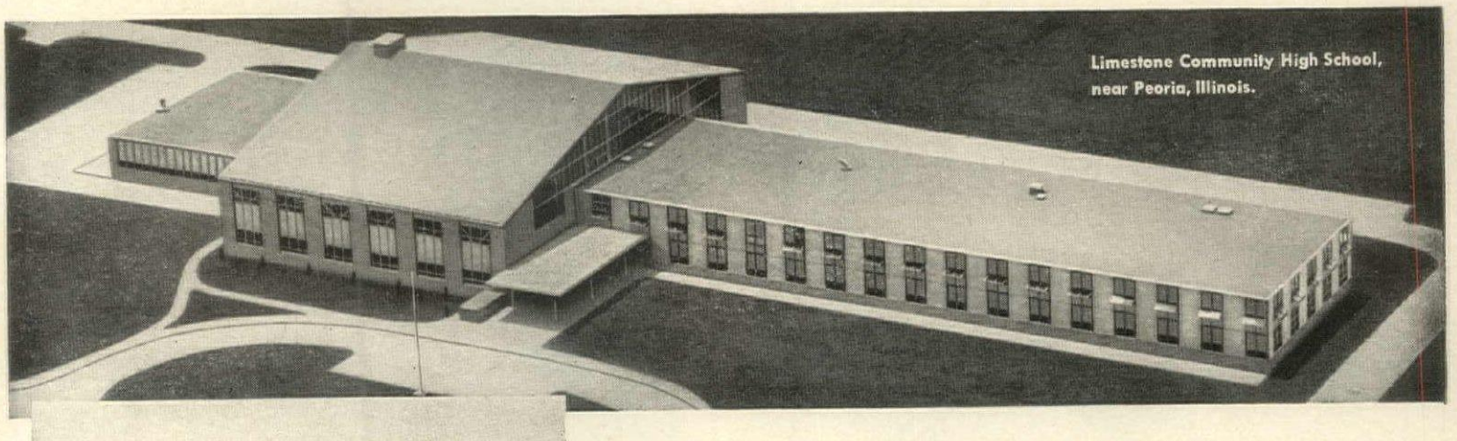
Manufacturer: L.O.F. Glass Fibers Co., Toledo, Ohio

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continued on p. 206

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ARCHITECTS: HEWITT & BASTIAN PEORIA, ILL.

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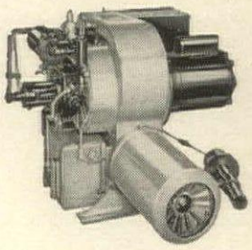
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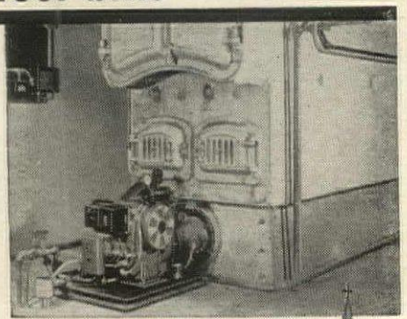
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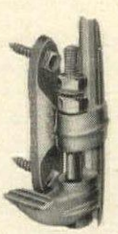
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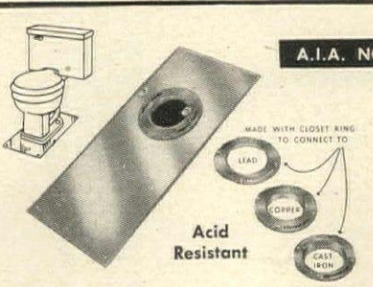
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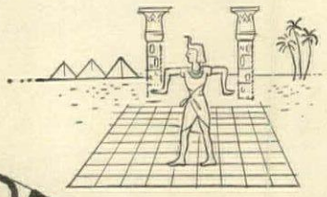
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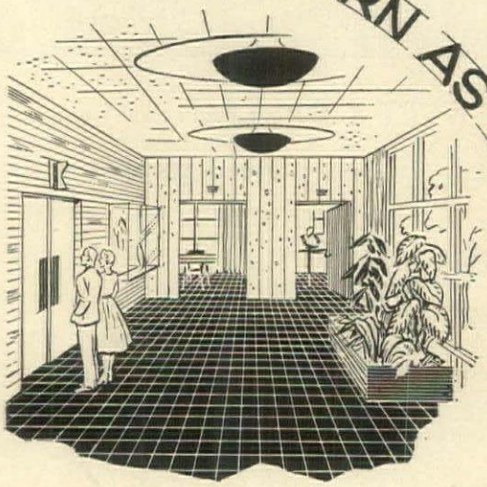
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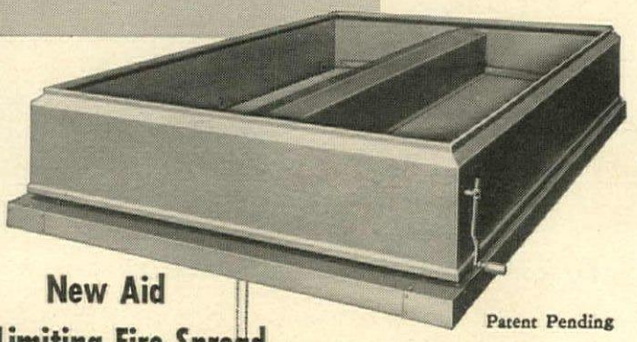
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Here's a ceiling with a "built-in silencer"! It's formed of remarkable acoustical-structural, cellular steel, long-span Fenestra* Building Panels with an *integral* acoustically perforated steel ceiling surface. An efficient sound-deadening material is enveloped within the cells—no acoustical material need be "stuck on"—there's nothing to come loose and fall down. And you don't spend an extra penny for special labor for this acoustical treatment!

This "package" unit acts as the ceiling and the joist and deck support for finished roof or—if your building has extra stories—a strong, sturdy subfloor for rooms above. Fenestra Steel Panels are noncombustible, are durable for the life of the building and handsome enough for the finest building. Maintenance washing or painting won't affect the acoustical efficiency. Little wonder there's such tremendous economy in using these versatile Fenestra Building Panels!

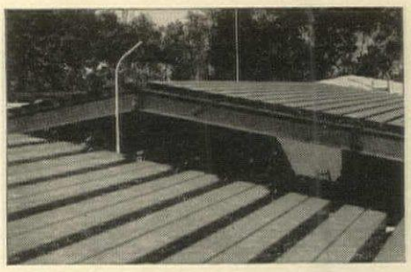
For complete details, call your Fenestra Representative. He's listed in the Yellow Pages. Or write to Detroit Steel Products Company, Dept. AF-12, 2296 East Grand Blvd., Detroit 11, Michigan.

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MORE AND MORE schools are using this acoustical-structural material. Willard Elementary School, Willard, Mo., uses 20,000 sq. ft. Architect: I. Dale Allmon, Springfield, Mo. Contractor: DeWitt Construction Co., Springfield, Mo.

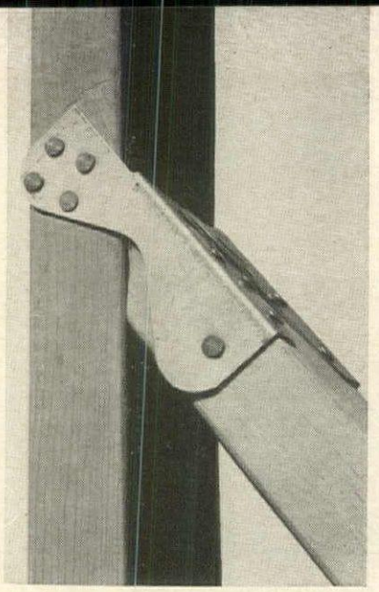


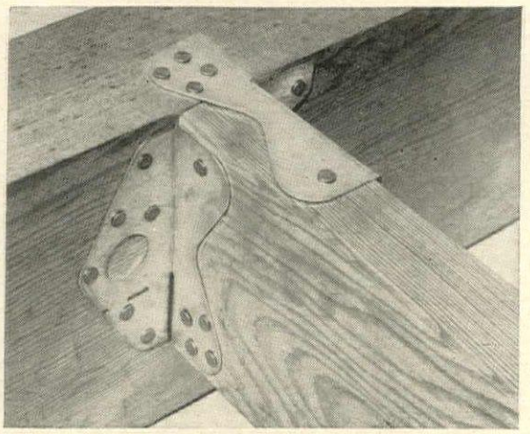
ANOTHER SCHOOL INSTALLATION in Trumbull Elementary School, Trumbull, Connecticut, uses 14,000 sq. ft. Architect: Lyons & Mather, Bridgeport, Connecticut. Contractor: E. R. Smith, Inc., Stratford, Connecticut.

PRODUCTS

Continued from p. 202

and for attaching cut-in joists to timber supports without solid blocking, the anchors demonstrated they could take loads of 300 to 530 lb. each depending on the load direction. (Test framing was constructed of Douglas fir or equivalent species.) Price, which includes 11 special 1¼" nails, is about 12¢ an anchor. *Manufacturer:* Arch Rib Truss Corp., P.O. Box 6754, Los Angeles 22, Calif.







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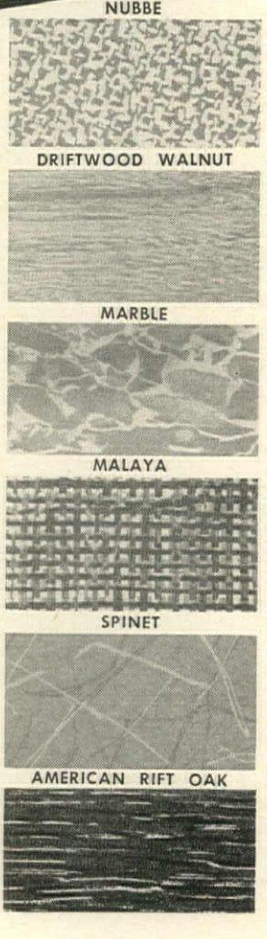
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TV-CASHBOX facilitates banking and foils bandits

Mosler has combined closed circuit television with an automatic burglar alarm in a currency console for bank cashiers. Called *Monitrol Teller-Vue*, the 42"-high x 30"-long x 20"-wide package contains a RCA television receiver with 17" screen, cash tray, two-way loudspeaker and alarm system. Foremost space-and-time-saving feature of the *Teller-Vues* is that a bank can centralize its records and still let tellers at drive-in and walk-up windows as well as at conventional stations get immediate verification of signatures and balances through the viewing screens. One real estate consideration the device raises, the company's President Edwin J. Mosler points out, is that a major city bank with branches in high rent districts could keep its bulky records miles away where square-foot rentals are less expensive. *Teller-Vues* also makes it possible for a



bank to operate miniature branch offices in terminals, airports, or shopping centers, and service them via television.

When a teller has to leave his station, the console's cover swings automatically shut. If for some reason the cover fails to close within a few seconds after the teller steps away, an alarm sounds. The electronic alarm also will go off should a thief demand that a teller hand over currency from the *Teller-Vue*. Selections of alarms range from soundless at the console (but audible in the nearest police station) to a beep in the executive offices or a clang outside the bank. Price, including installation runs about $3,750 a unit. *Manufacturer:* Mosler Safe Co., 320 Fifth Ave., New York 1, N.Y.

continued on p. 210



ALTEC SOUND SYSTEMS ARE THE CHOICE FOR THE FINEST BUILDINGS THROUGHOUT THE WORLD

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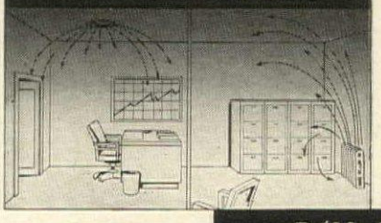
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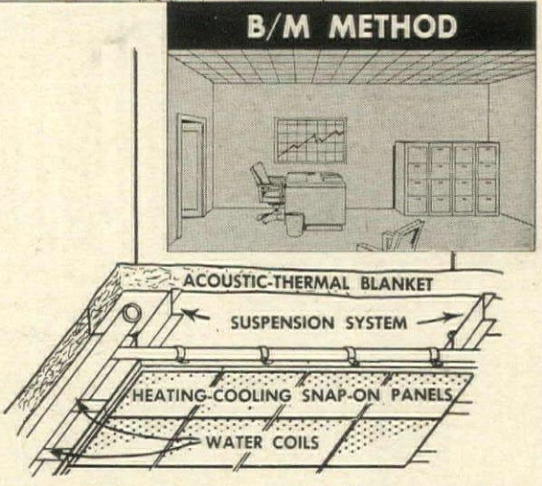
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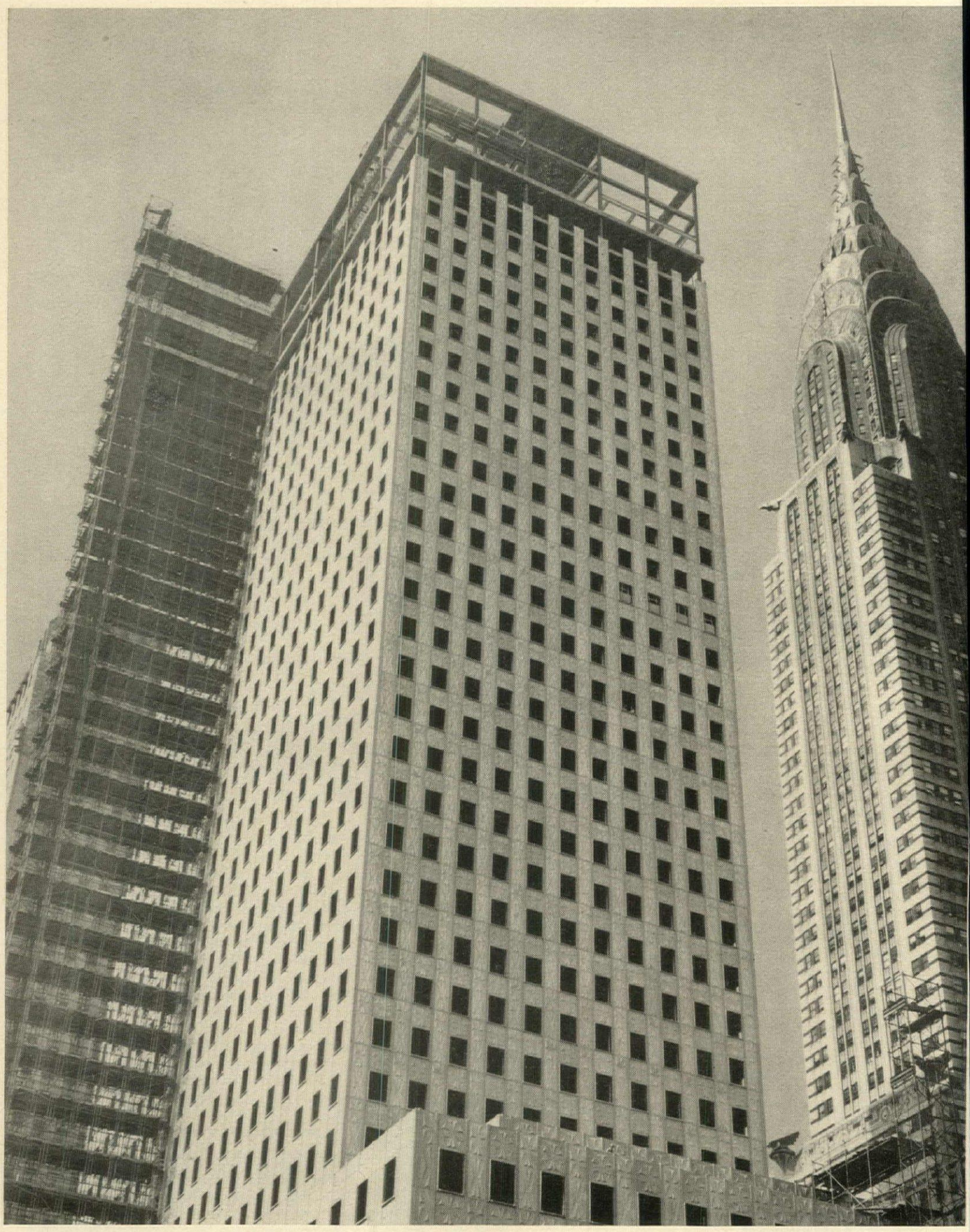
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The stainless steel for the Socony Mobil Building is being supplied by Republic and other leading producers. Harrison and Abramovitz, architects; John B. Peterkin, associate. Turner Construction Company, general contractor. Edwards and Hjorth, structural engineers. Jaros Baum and Bolles, mechanical engineers. Edward A. Ashley, electrical engineer.



An 11-acre Stainless Steel curtain is going up on 42nd street

And because it is stainless steel it will stay vivid and attractive for life. It's the new Socony Mobil Building being erected at 150 E. 42nd Street, New York City.

When completed, the building's exterior surface will contain 11 acres of stainless steel in the form of curtain walls, window frame and sash, piers, mullions and louvers.

Why was stainless steel selected for the world's largest metal-clad office building? Because it offers so many important architectural and construction advantages. For example:

1. Stainless steel curtain-wall construction lightens the building by providing strength without added bulk. Wall weight of the Socony Mobil Building has been reduced about 70% as compared to conventional construction. Only 4 inches of masonry are needed behind the stainless walls to meet New York City building codes. This means an extra 3% of rentable space.

2. Stainless steel curtain walls speed erection. Ease of installation and maximum speed are built in to each panel during fabrication. And as each panel is quickly and easily bolted into place it overlaps the one below. This provides a tight fit that keeps weather out, yet allows the building to breathe. The installation work is done from within the building, reducing the need for expensive surface scaffolding.

3. Stainless steel reduces maintenance costs. It is highly resistant to rust and corrosion and offers immunity to weather effects. Stainless steel never needs painting. These factors are "bonus benefits" of stainless steel that add up to minimum maintenance, particularly in hard-to-service areas like flashing, trim, parapet caps, domes, gravel stops and drainage items.

4. Stainless steel retains its beauty. Because of its resistance to rust and corrosion, stainless steel will not discolor with age. The neighboring Chrysler Building, shown right in main illustration, is proof of that. A recent inspection of the building's stainless steel spire revealed only an accumulation of dirt after a 25-year exposure to the elements. No deterioration. No corrosion. No discoloring. The beauty of stainless steel is enduring.

The future for stainless steel in architectural applications is as bright as the metal itself. And remember, it harmonizes beautifully with other materials of construction. Before you progress too far with your future building plans, investigate ENDURO Stainless Steel by Republic. The coupon will bring you complete information.

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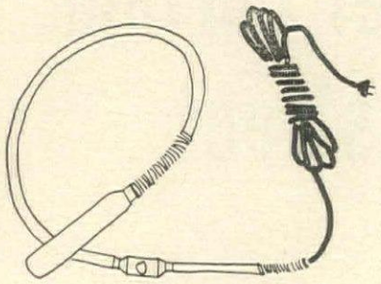
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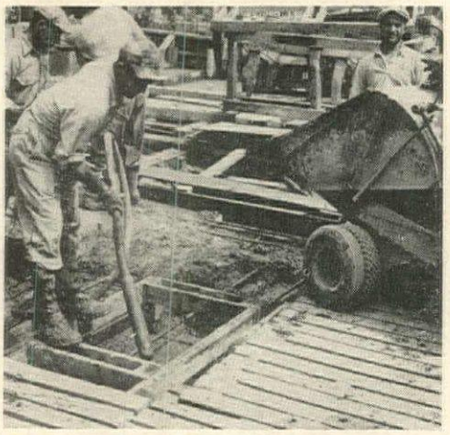
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PRODUCTS

Continued from p. 206



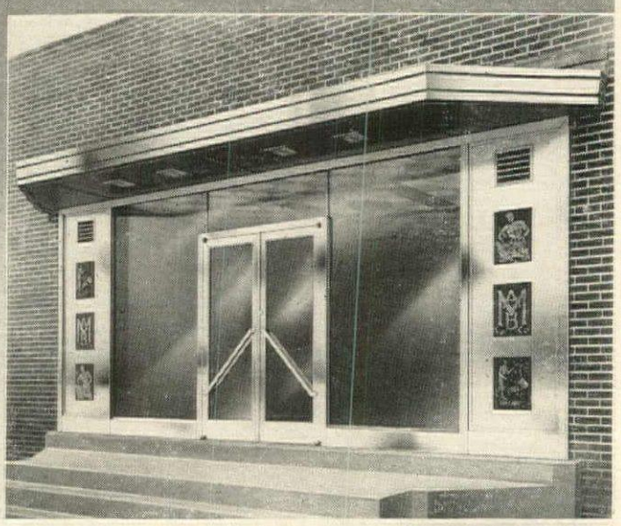


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Manufacturer: Master Vibrator Co., 1752 Stanley Ave., Dayton 1, Ohio

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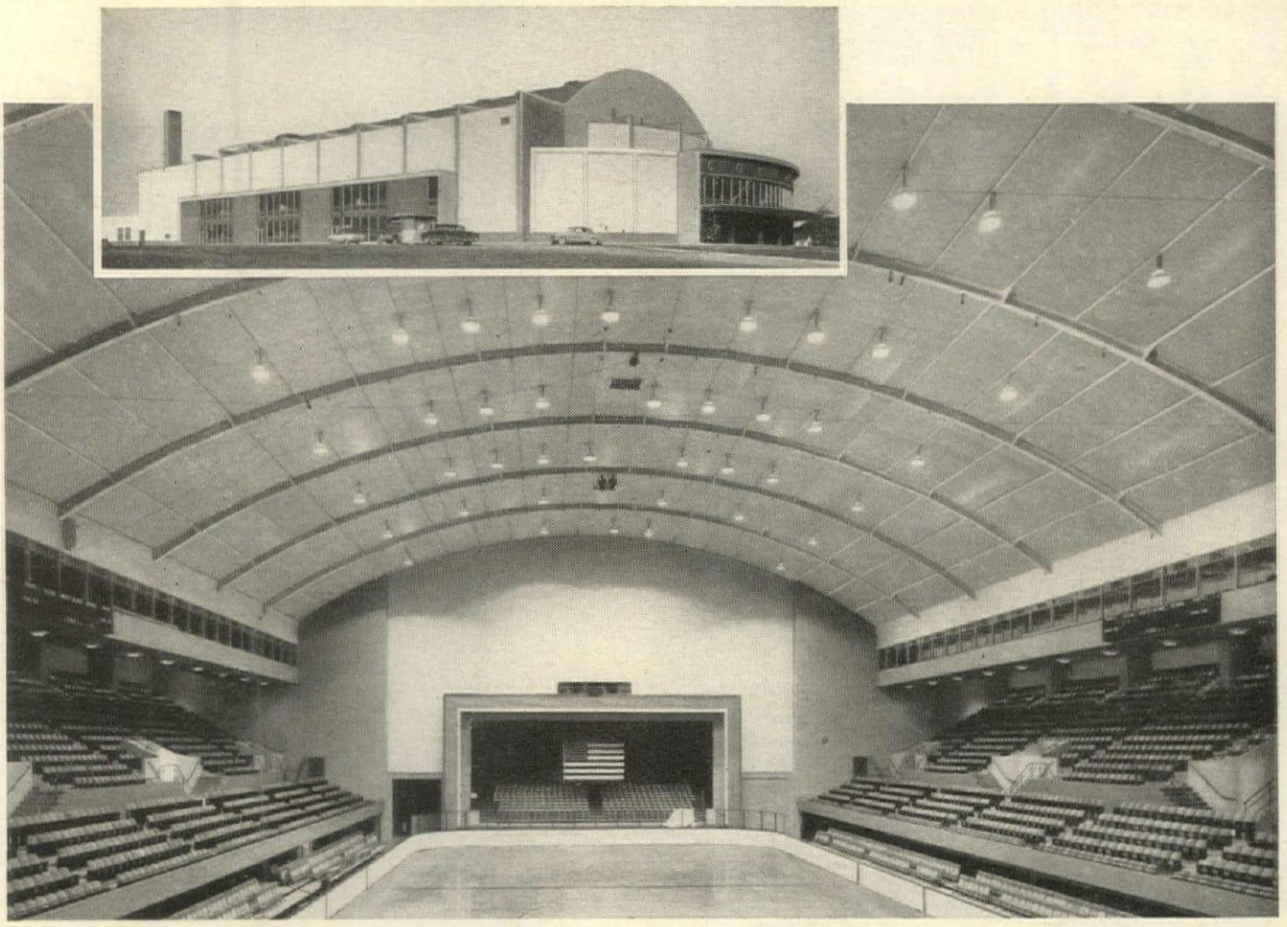
Working with precision of the latest kitchen device, *Glas-Col*'s new electric melting pot has a thermostatic control which lets the operator choose the right temperature for melting asphalts, tars, resins, mastics or other viscous material. Standing 14″ high, the 15-lb. portable pot operates from any 115-v. outlet. Its 3-gal. capacity makes it practical for maintenance jobs where small quantities of material are needed. The melter's jacket is aluminum, and a 1¼″-thick glass-fiber blanket insulates its heating chamber. Price: about $75.

Manufacturer: Glas-Col Apparatus Co., Inc., 711 Julman St., Terre Haute, Ind.

COMMERCIAL OVEN cooks cool and fast on UHF waves

Virtually heatless, Raytheon's *Radarange* makes use of ultra-high-frequency microwaves to cook food astoundingly fast. This stove unit for hotels, restaurants and insitutions stands 5′-4½″-high and has a 12″ x 20″ x 22″ oven. It prepares many foods

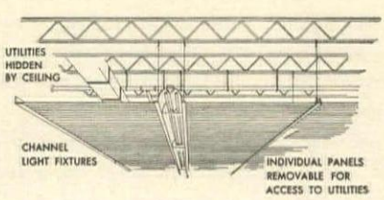
continued on p. 214



Spokane Coliseum proves efficiency of ReynoCoustic

Performers and spectators have attested the high acoustical efficiency of ReynoCoustic in the Spokane Coliseum. And this installation demonstrates other advantages of the system no less dramatically. The virtual elimination of maintenance is important in a ceiling difficult to reach. The brightness of aluminum makes lighting more effective, less expensive. And it is vital, in a public place, that this acoustical system is incombustible. Each shipment carries Underwriters' Laboratories label. Available in either natural aluminum or soft-white baked enamel finish.

A complete installation service is available. For name of nearest franchised acoustical applicator, call the Reynolds office listed under "Building Materials" in classified phone books of principal cities. For literature, write to Reynolds Metals Company, Building Products Division, 2020 South Ninth Street, Louisville 1, Kentucky.



Typical installation showing method of support for ceiling members and lighting fixtures. This system provides a noise reduction up to .90- uniformly high at all frequencies.

See "FRONTIER." Reynolds great dramatic series, Sundays, NBC-TV Network.

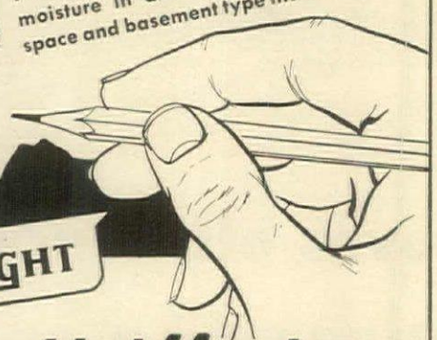
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A TRUE VAPOR SEAL MUST CONTAIN THESE FEATURES . . .

Check your present vapor barrier material for these quality standards . . .

- ☑ Vapor permeance of only .0066 grains of water per square foot per hour.
- ☑ Strong enough to resist rupturing and tearing during the pouring of aggregrate and under the trundling of wheelbarrows.
- ☑ Permanently installed in a minimum of time to provide a monolithic barrier that will expand and contract with the slab above without breaking the seal.
- ☑ Resistant to rot, mold and termites.
- ☑ Provides positive protection against moisture in all slab-on-grade, crawl space and basement type installations.



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Premoulded Membrane

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HAS THEM ALL!

Be sure that the vapor seal material you're using or specifying meets these Sealtight standards of quality . . . it's the one sure way to provide positive protection against destructive moisture.

We sincerely advise and invite your comparison of "Premoulded Membrane" against all other vapor seal products . . . . we're sure that once you do, you'll also agree, that there's only one *true* vapor seal on the market . . . Sealtight "Premoulded Membrane."

ARCHITECTS, BUILDERS, HOMEOWNERS



Remember the time to "eliminate" destructive moisture and vapor is in the original construction, with the use of Sealtight Premoulded Membrane and Corktite perimeter insulation . . . all other methods are merely temporary "stop-gaps". *WRITE TODAY FOR COMPLETE INFORMATION.*

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MANUFACTURED BY . . .

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"Packaged" Swing Door Entrances

OF EVER-NEW STAINLESS STEEL

Your clients gain many extra values — and *you* gain a lot of extra good will — when your building plans include the big plus of International Swing Door Entrances. Here are the first such entrances of stainless steel to be offered as complete "packages." Here are doors that defy time, weather, and hardest wear . . . that stay bright and new-looking always with least care . . . quality entrances that are carefully pre-assembled, fully pre-fitted, beautifully adaptable to virtually every type of installation.

Give your clients building entrances that never lose the distinctive smartness you design into them. Write for your personal copy of the new International handbook, "Packaged Stainless Steel Swing Door Entrances."

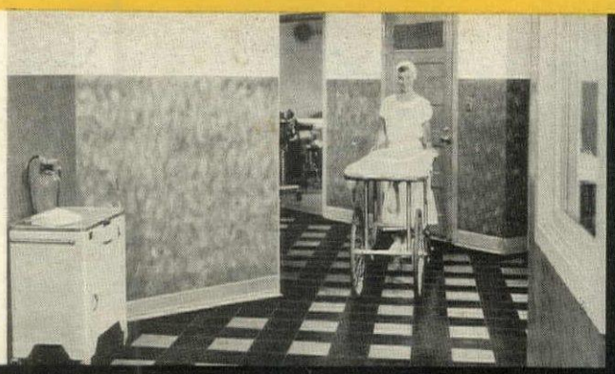
See Sweet's Architectural File or the Classified Section of Your Telephone Directory

INTERNATIONAL STEEL COMPANY

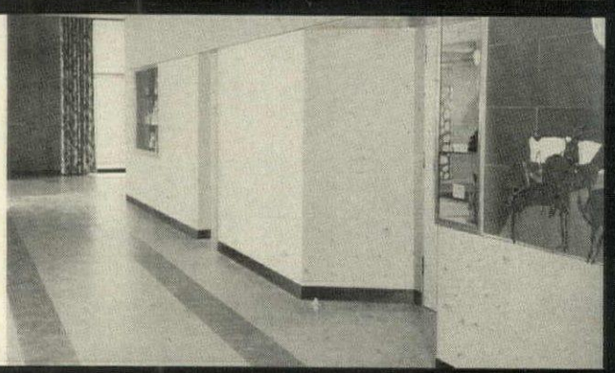
ENTRANCE DIVISION

2062 EDGAR ST., EVANSVILLE 7, IND.

They do it with KALISTRON®



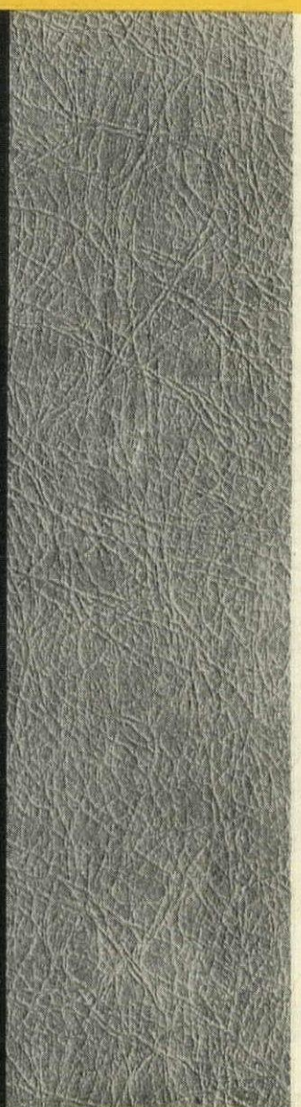
HOSPITALS
Protect hospital corridor walls from bangs and bumps of carts and beds.



SCHOOLS
Armor school walls from hands and feet and scuffs and scrapes of young America.



RESTAURANTS
Shield restaurant walls from daily punishment of careless guests.



The things you can do with Kalistron! Would you dare, for instance, to use a pastel shade on a "busy" elevator wall, that gets finger-kissed 100 times a day? Why not, if it's Kalistron, cleaned with a damp cloth in seconds!

Kalistron, another Weldwood product, is the wonder material that's not only so beautiful, but just about the toughest wall covering you can get! It's surfaced with Krene — tough, transparent, pretty much indifferent to scratches, scrapes, scars, stains.

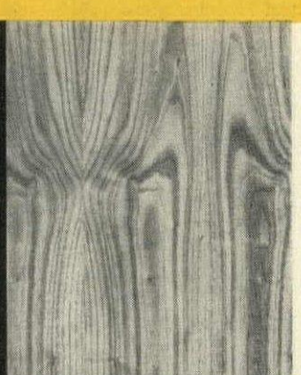
Kalistron's 3rd dimensional color beauty — and you have many decorative colors to choose from — is fused to the underside, out of harm's reach forever!

Now made in several grades, for any purse or purpose, including the upholstery grade for matching walls with chairs, tables or built-in units.

—and they do it with WELDWOOD® FLEXWOOD®



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Wood-panel a wall in beautiful matched grain effects.



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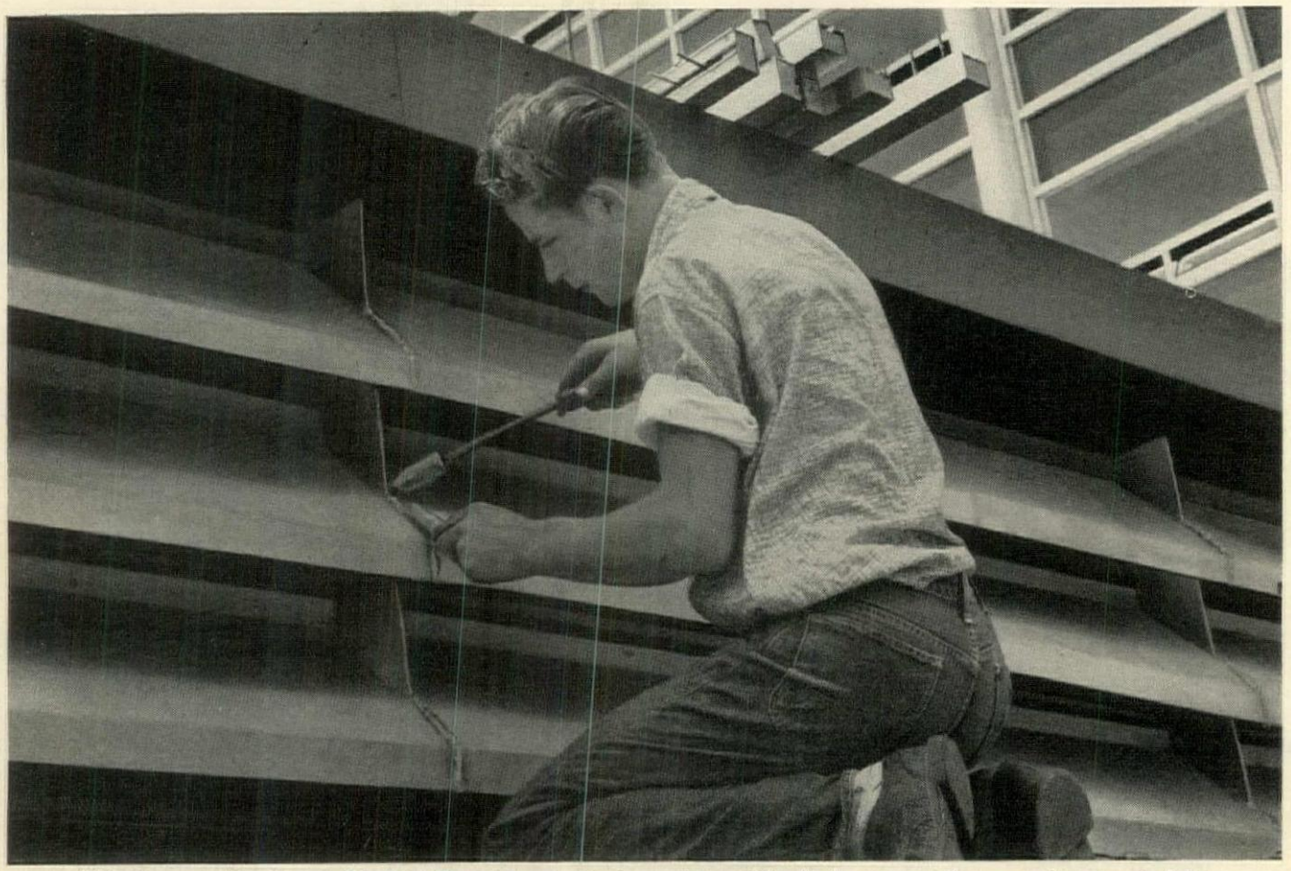
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This sheet metal worker . . . like his fellow artisans around the country . . . is familiar with Monel Roofing Sheet. With Monel nickel-copper alloy, installation moves fast and smoothly. And you can rely on roofing men to follow your specs to the letter. Just ask any roofing contractor how easy it is to work with Monel Roofing Sheet.

New hotel uses Monel for long life and rugged wear

Flashings and other exposed metal work of the new Statler Hilton Hotel in Dallas, Texas, are made of Monel* Roofing Sheet.

So are the big architectural louvers.

Why was this top quality nickel-copper alloy sheet chosen?

For a *number* of reasons! Monel does not rust and is resistant to atmospheric corrosion. It is strong. It is tough. *Stronger* and *tougher*, in fact, than any other non-ferrous roofing metal.

It resists stresses, strains and wear. Has a low coefficient of expansion. Won't crack during extreme temperature changes.

Because of this combination of properties, lighter gauges than commonly used can be specified. This means less cost per square foot in many instances.

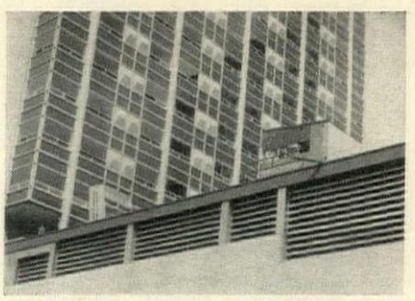
Monel Roofing Sheet is also ideal for localities where dust, dirt or soot are problems. It stands up against these gritty substances . . . resists corrosion caused by chemicals and fumes.

So figure on Monel when you take your base bids for schools, hotels, factories, office buildings, hospitals and other institutions. If you would like assistance on specific jobs call on us at any time.

And speaking of assistance, we believe that you'll find our booklet, "One Metal Roof", well worth sending for. It shows typical Monel nickel-copper alloy installations. Gives service records, and includes many building photographs. Write for a free copy today.

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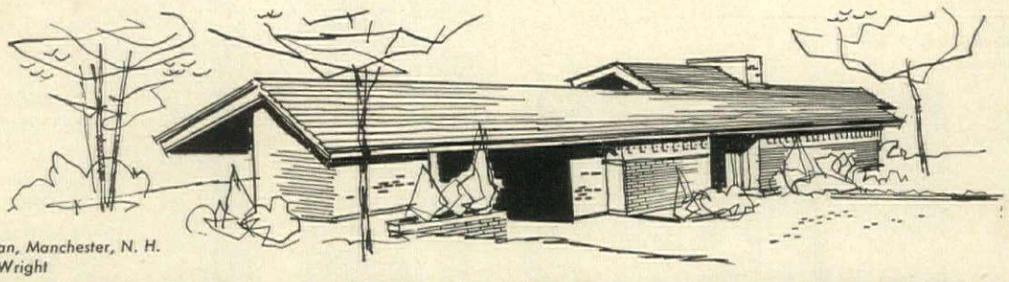
These louvers on the new Statler-Hilton in Dallas will serve for the life of the building. They're strong. They're corrosion-resistant. They're Monel.

Sheet Metal Contractor: Lydick Roofing Co., Dallas.

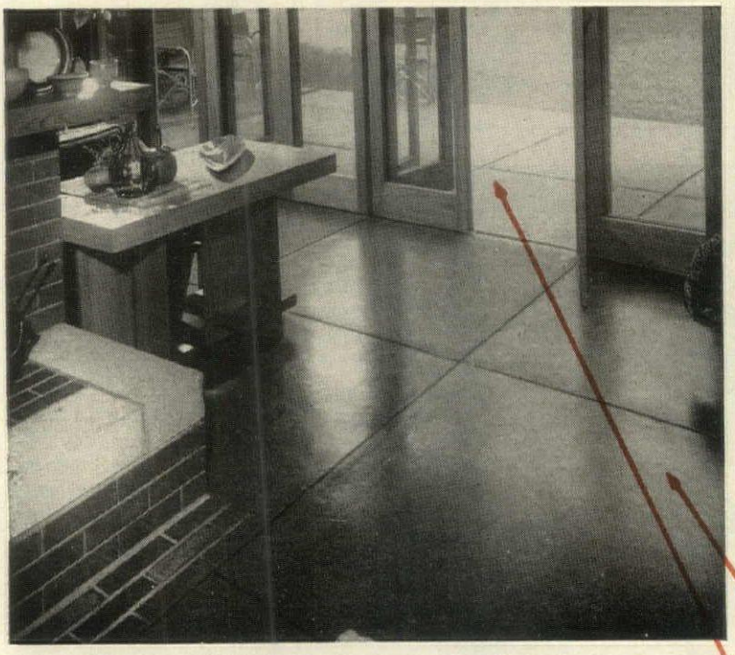
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50 YEARS OF *Nickel Alloy Progress* PIONEERED BY MONEL 1905 - 1955

Monel Roofing . . . *"for the life of the building"*



Home of Mrs. I. Zimmerman, Manchester, N. H.
Designed by Frank Lloyd Wright







From the first rough sketches . . .

Frank Lloyd Wright specified Colorundum floors for their warmth of color and beauty."

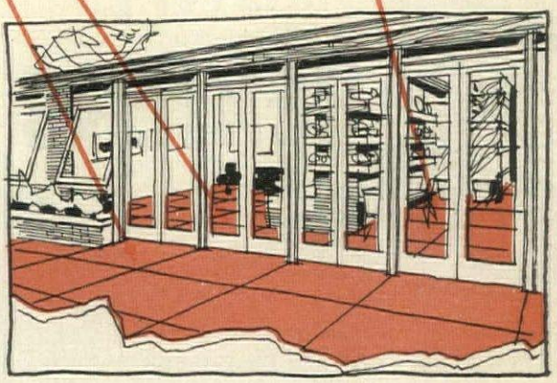
Mrs. I. Zimmerman, Manchester, N. H.

"Look at these photographs of our exciting new home and you can see why we just wouldn't consider drab, colorless concrete. From the first rough sketches," writes Mrs. Zimmerman, "we planned attractive, luxurious Colorundum for the patio and the service areas . . . especially when we found out how little it cost!"

Colorundum is the ideal solution to the problem of exposed or uncarpeted areas of plain concrete. It provides colorful, wear-resistant floors at just a fraction of the cost of tile.

Colorundum is far more resistant to traffic than ordinary concrete floors. It is a balanced formulation of nonslip aggregate (next to the diamond in hardness), water-repellent compounds, and durable colors . . . contains no silica, quartz, metal or sand. It is easy to keep clean, and since it contains no metal, it will not rust or stain.

Colorundum is available in eleven decorator colors.



Fused color. Not a paint or coating! Colorundum is troweled into the concrete topping and becomes an integral part of the surface, producing beauty and durability.

A Subsidiary of Sun *Chemical Corporation*

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☐ *Please send me complete information on COLORUNDUM.*

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Firm Name_____

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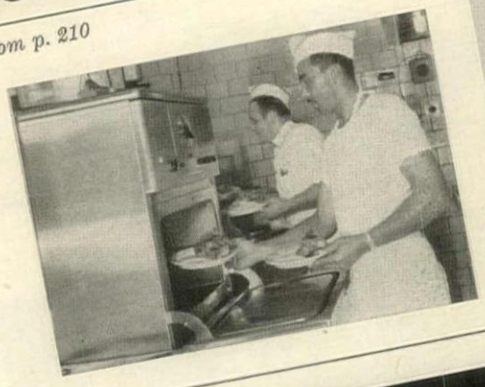
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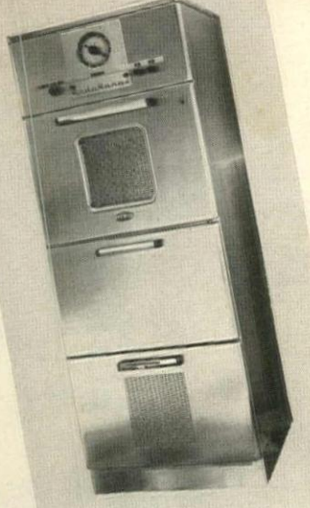
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PRODUCTS

Continued from p. 210





in seconds, thaws frozen foods to refrigerated temperatures in less than three minutes. Applying the principle of UHF to food, the *Radarange* sends out electronic waves which reflect from metallic surfaces, pass through glass, and are absorbed by food. The stove should do much to eliminate kitchen bottlenecks by cutting down on steam-table time and increasing use of prepared frozen foods. Cooking costs are decreased and volume serving becomes less of a problem.

The manufacturer reports that a chicken, which normally take two hours to roast, can be done up brown in nine minutes; a large roast of beef is ready for serving in 40 minutes instead of six hours. Average cooking time for most food is three to five minutes, and so the number of *á la carte* items on the menu may be increased. According to Raytheon, foods precooked and then microwave heated taste no different than foods cooked and served immediately. As for table turnover, the faster cooking time means more people can be served during dining hours. Price of the cool cooker is a cool $2,975 F.O.B

Manufacturer: Raytheon Manufacturing Co., Boston 34, Mass.



MICROWAVE STOVE heats food, surroundings

For the home, apartment and motel k
en, Tappan Stove is producing a don
microwave oven that may have its e
on building design as well as on the
maker. Cooking without any externa
the new electronic oven will not o
duce air-conditioning loads but, m
portant architecturally, make pr
interior kitchens centered arou
chanical cores. Only ventilatio
will be to carry off food odors.
pact 150-lb. unit, designed fo
cabinet mounting, cooks via an
scrambler which spins the micro
the oven where they swirl o
surfaces and are absorbed b
The cooking is achieved by
heat created as the food mole
around rapidly when bombar
microwaves. All heat gener
side the food; stove and kit
To prevent burn injuries to

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Presenting . . . the World's Finest Commercial and Industrial Heating for 1955-56

Humphrey

AUTOMATIC GAS

UNIT HEATERS

These Humphrey Unit Heaters give longer and better service with less attention and less expense than any other kind of industrial or commercial heating equipment. They are quiet, clean, good-looking, and so versatile that they are used in every conceivable type of store, office, factory and institution.

Choice of Propeller Fan or Blower

6 sizes, from 65,000 to 250,000 b.t.u. input, with choice of blower or propeller fan—a total of 12 models. Blower type approved under latest AGA requirements for use with ductwork.

Numerous OPTIONAL FEATURES

Difficult or unusual installations are made easy by use of the wide variety of optional equipment available, including automatic controls, vertical louvres, cold air return, 90° warm air outlet, etc.

COMPACT MODEL 40-G

Cabinet only 17" x 22⅜" x 13¼". Rated input, 40,000 b.t.u. Propeller type fan, full safety controls.

GENERAL GAS LIGHT COMPANY

Kalamazoo, Michigan

Originators of Gas Unit Heaters



These Natural Walnut Lamidall walls will have a care-free future in Miller's Matchless Restaurant and Cafeteria at the new Mile High Center, Denver, Colo. General Contractor: Orr Construction Co., Denver—Architect: Lloyd Williams, Phoenix, Ariz.

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DECORATIVE PLASTIC LAMINATE

For WALLS That Stay Beautiful Without Care

● For walls, top surfaces, and fixtures that meet today's demand for smart, colorful, maintenance-free interiors Lamidall should certainly be your first choice. Here's why . . .

Lamidall has a deep, durable beauty that stays fresh and bright for years with no more care than an occasional wipe of a damp cloth . . . needs no polish or protective coatings.

Lamidall's low square foot cost and low application cost make it the wisest investment in the long run. Even though it is a *genuine plastic laminate*, Lamidall is in the same price range with ordinary interior wall treatments.

Lamidall is made in ⅛" thick flat panels up to 4′ x 12′. They are easy and economical to handle and install . . . no special tools or skills required. Send today for samples and installation information.

LAMIDALL *—a good investment in a lifetime of beauty· · · proved in years of service.*

LAMIDALL IS A PRODUCT OF

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Lunch Hour Seating can be provided without building a special lunchroom for the purpose

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Schieber

FOLDING TABLES & BENCHES

over-engineered for protection of architects and users

Multiple-use-of-space is a logical answer when the building appropriation demands practical economies. Corridors, aisleways, gymnasiums and auditoriums can be designed to serve double duty! Since 1931 thousands of Schieber installations of both portable and built-in type folding tables and benches have been made. They are being used successfully in all parts of the country. Consult Sweet's or write for literature.

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Allen School
Hutchinson, Kansas
Mann & Company
Architects



PAROCHIAL SCHOOL
Sacred Heart School
Dearborn, Michigan
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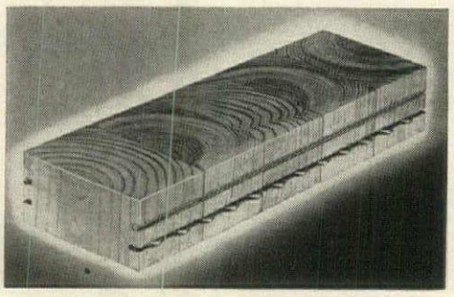
Detroit 39, Michigan

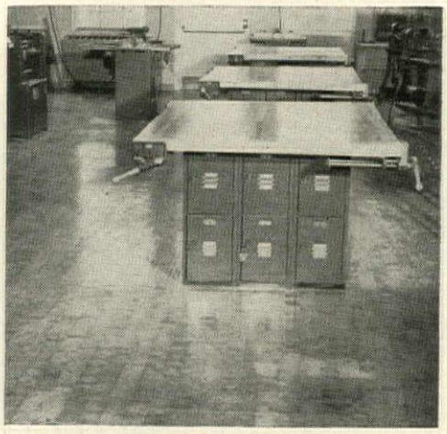
Representatives in all areas—U. S. & Canada

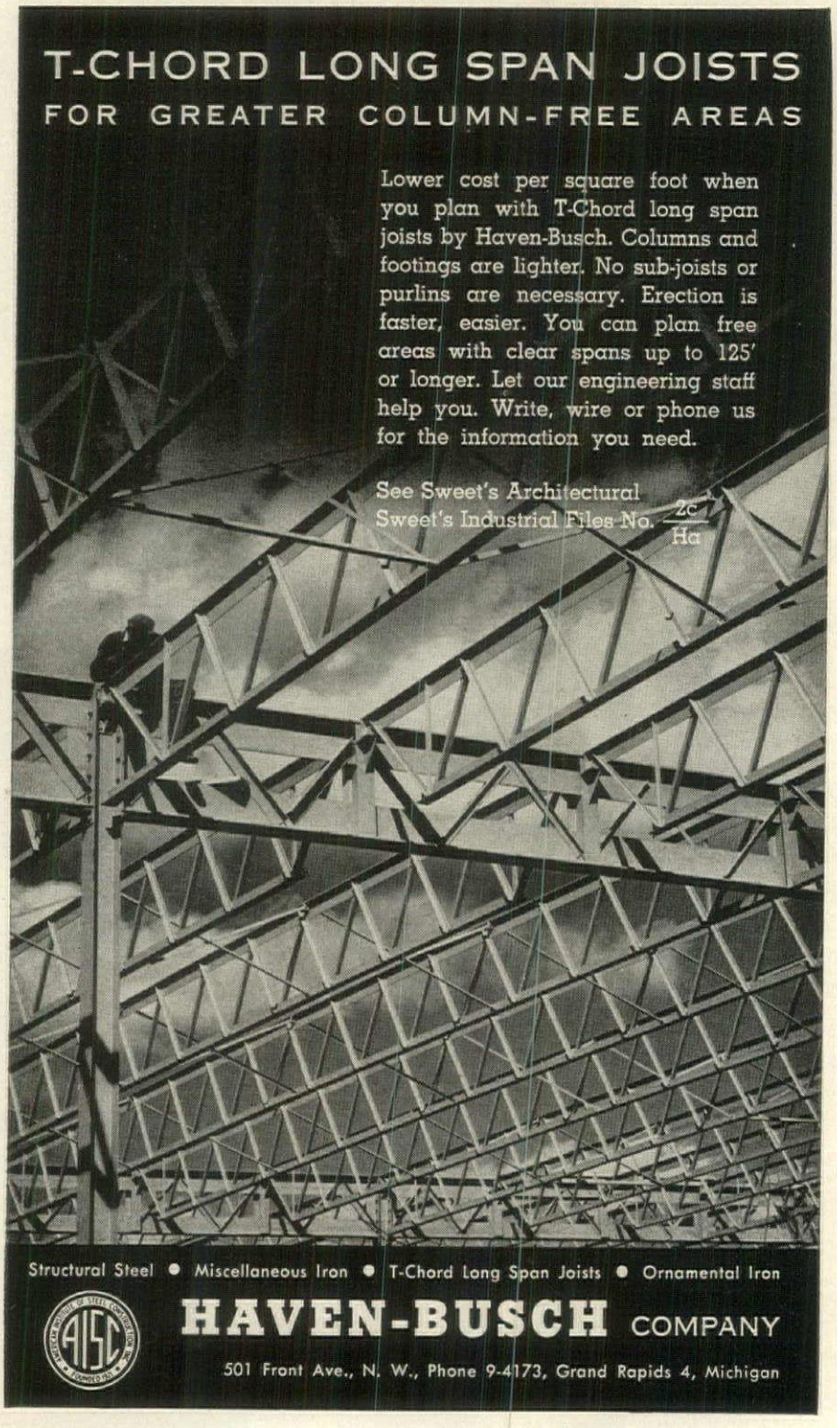
PRODUCTS

Continued from p. 214

sters, the stove's power source is controlled by the oven door latch. The door must be closed before the waves circulate. The Tappan unit operates on regular 220-v. current. Its cooking time is slightly longer than Raytheon's 4750-w. commercial unit (see p. 210), but still a fraction of conventional appliances. It sells for $1,000.
Manufacturer: The Tappan Stove Co., Mansfield, Ohio





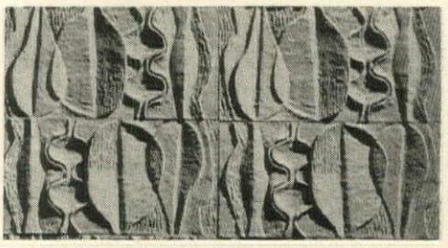


WIRED WOOD BLOCKS make durable, flexible floor for shops and gyms

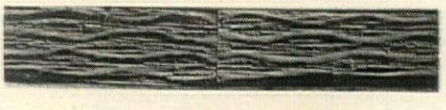
Wire-trussed blocks of 1½" or 2" thick pine, *Kreolite* flexible strip flooring is an adaptation of the firm's rugged industrial floors. The assembled strips of end grain lumber are interlocked by steel wire splines. Special compounds are applied to play up the swirly grain pattern and make the flooring scuff-proof. The finished floor is smooth, resilient, and—especially welcome in schools whose curricula include modern dance—splinter-free. Installed prices including finish treatment run about $1.15 and $1.25 per sq. ft. for the 1¼"; about 10¢ more for the 2".
Manufacturer: Jennison-Wright Corp., Toledo, Ohio

SCULPTURED CLAY TILES applied with adhesive

Lee Rosen's bas-relief tiles in siennas and umbers are an earthy yet sophisticated wall surfacing. Retaining the texture of terra cotta, the unglazed ceramic units

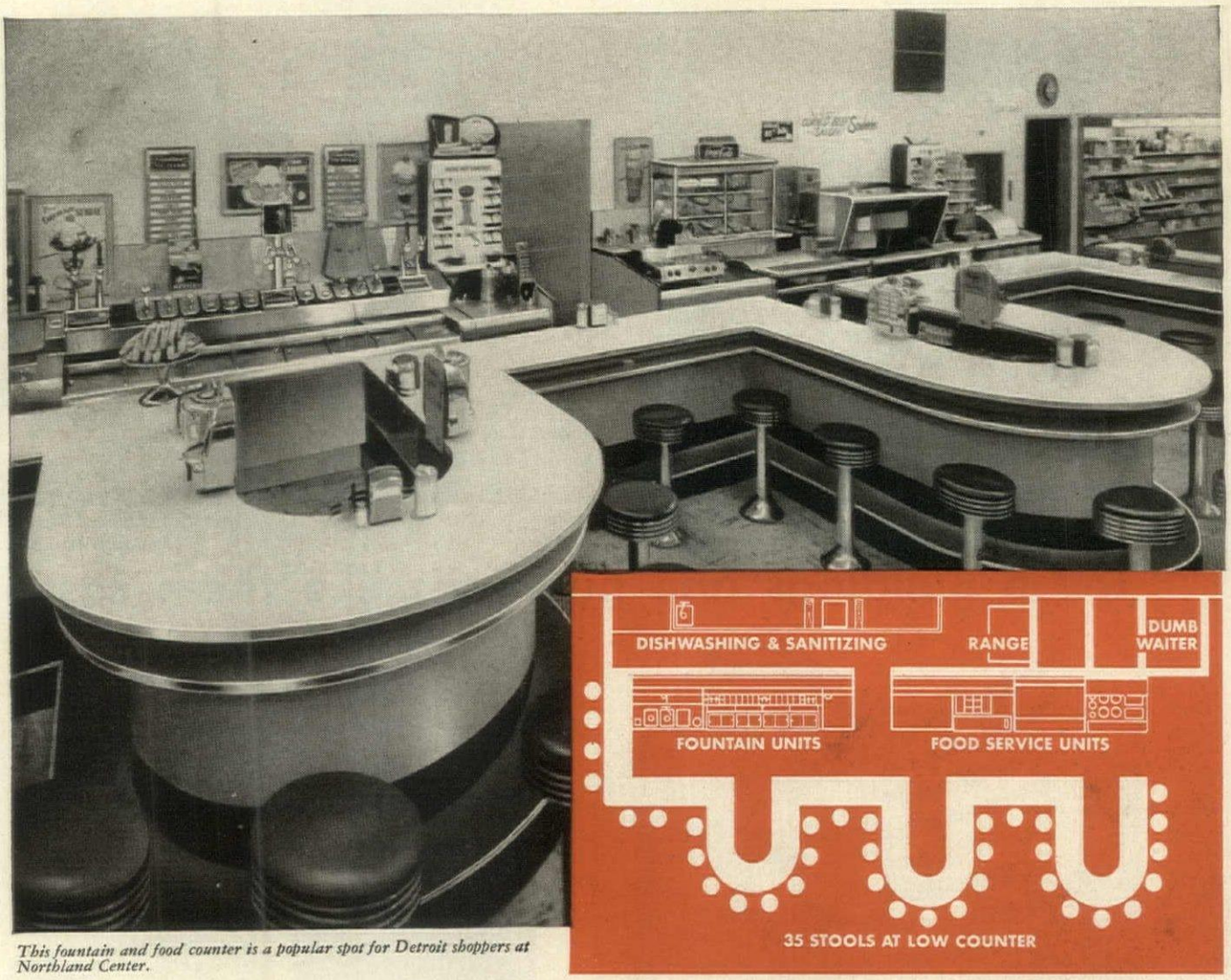


weigh only ½ lb. per sq. ft. and so can be set in an adhesive bed without hangers or heavy mortar. They even can be supplied already mounted on 4' x 8' plywood panels. In addition to the hieroglyphic tiles above and the barklike ones below, Designer Rosen creates murals in larger tiles for specific architectural installations.



Price of the stock tiles pictured, which measure 8¾" x 4" x ¼", is $1 a piece. Glazed tiles are also available designed for application on room dividers.
Manufacturer: Design Technics, 4 E. 52 St., New York, N. Y.

continued on p. 220



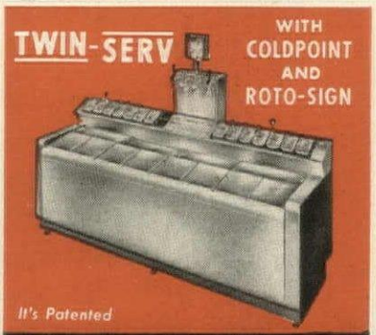
This fountain and food counter is a popular spot for Detroit shoppers at Northland Center.

Pharmacy Serves Up to 2,000 a Day at Bastian-Blessing Food Fountain

There are 35 stools at this three-bay counter, which is only 38″ high for customer convenience—yet the average day sees 1,200 checks rung up at the soda fountain, and the busy day with evening hours brings in 2,000 sales!

As the floor plan shows, the TWIN-SERV fountain and the food service units are arranged along the wall. The dishwashing and cooking units, also by Bastian-Blessing, are behind the wall. Northland Pharmacy is owned by Ben Pearl and Louis Silver, who lease the fountain to Constantino Barbas. The ease with which the fountain is handled and profit that results, are proof of the efficiency of the installation itself, and of the operating arrangements.

This food fountain in the Northland Pharmacy is one of six such Bastian-Blessing installations at Northland. Others are in a dining room, a confectionery, another drugstore, a cafeteria and a variety store. This decided preference was made on the basis of years-ahead styling, sturdy construction, and features that promote sanitation and assure efficiency. Whatever your needs, see the distributor near you, or write The Bastian-Blessing Company, 4205 W. Peterson Avenue, Chicago 30, Illinois.



1. TWIN-SERV puts ice cream in tilted cans all along the front.
2. COLDPOINT Cooler Station insures perfect cold mixed drinks.
3. New ROTO-SIGN combines light, motion and color to whet appetites.

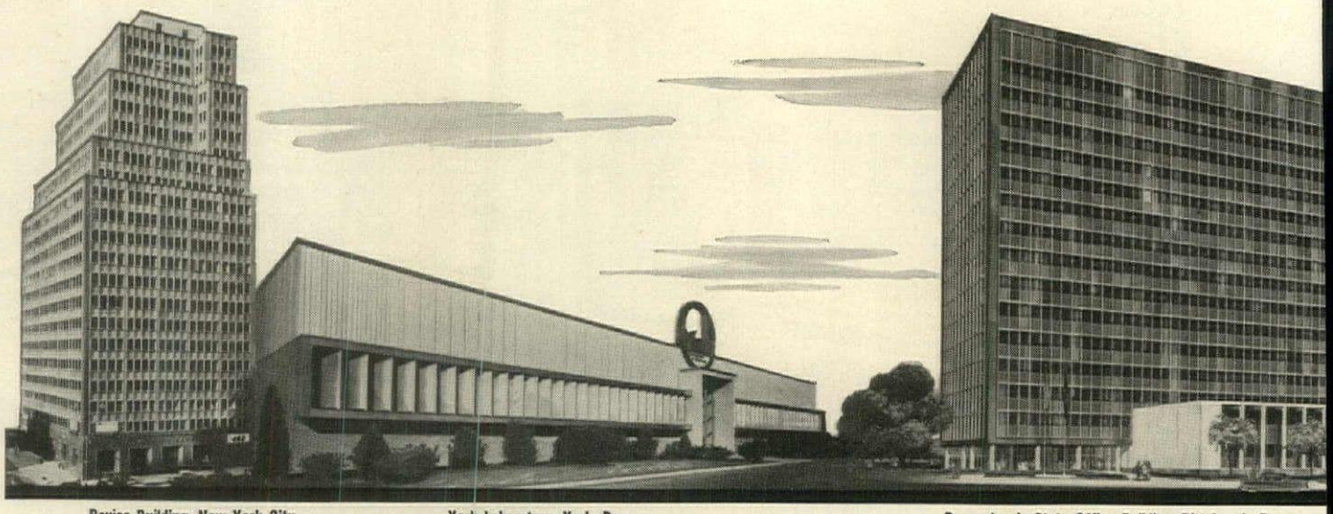
12-page, colorful Catalog S-156 gives the story of TWIN-SERV. Get your free copy today.



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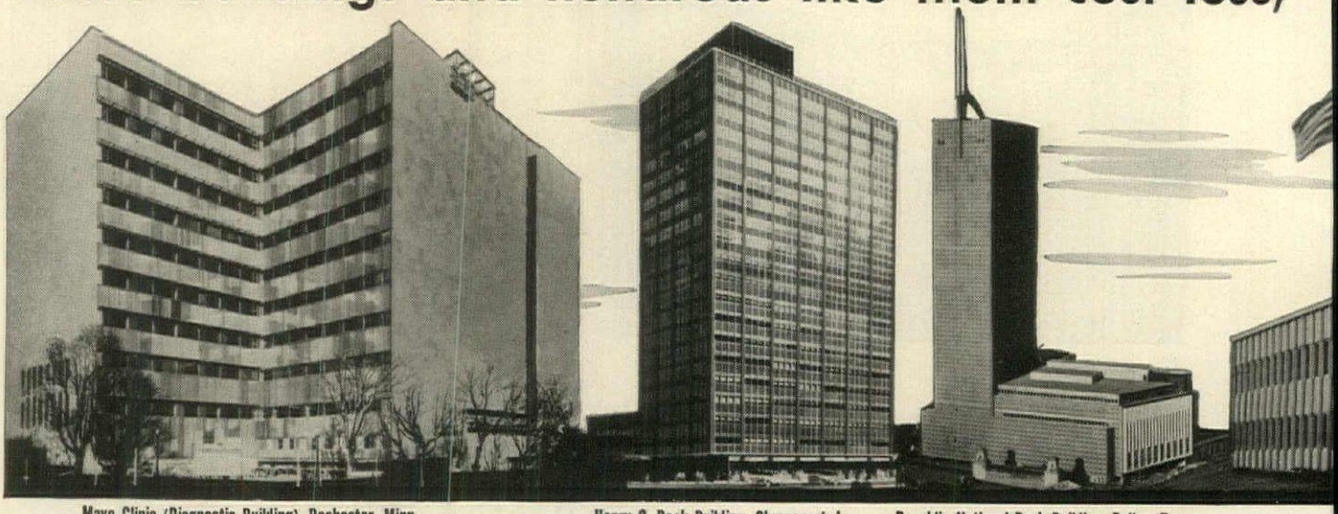


Davies Building, New York City
Architect: Emry Roth & Sons

York Laboratory, York, Pa.
Architect: Buchart Engineering Corp.

Pennsylvania State Office Building, Pittsburgh, Pa.
Architect: Altenhof & Bown

These buildings and hundreds like them cost less,



Mayo Clinic (Diagnostic Building), Rochester, Minn.
Architect: Ellerbe & Co.

Henry C. Beck Building, Shreveport, La.
Architect: Neild-Somdal Associates

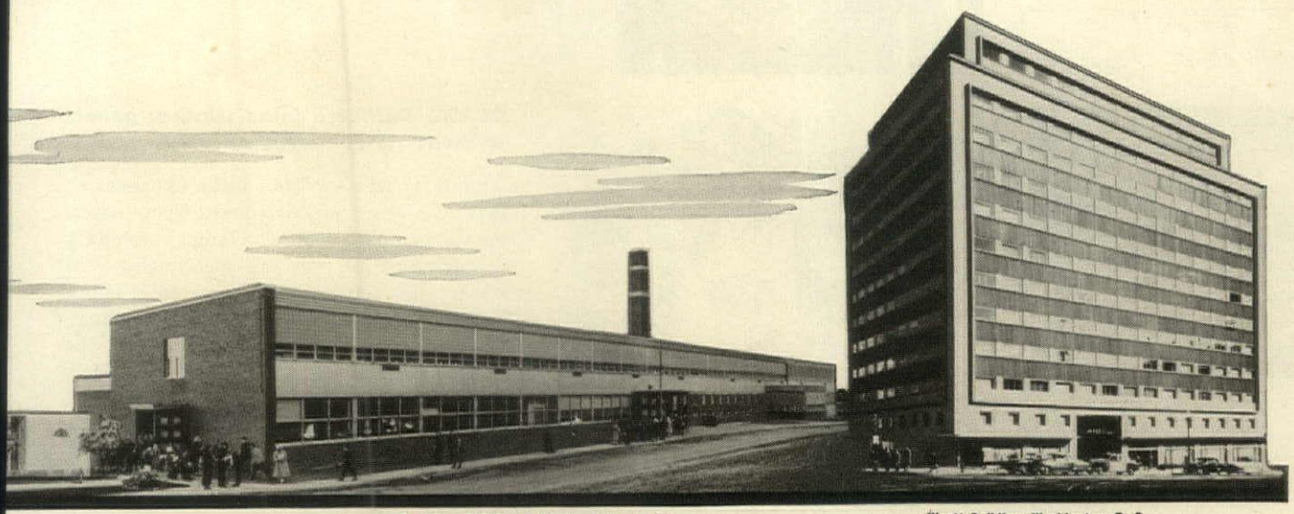
Republic National Bank Building, Dallas, Texas
Architects: Harrison & Abramovitz

less maintenance because they are constructed



Missouri State Office Building, Jefferson City, Mo.
Architect: Marcel Boulicault

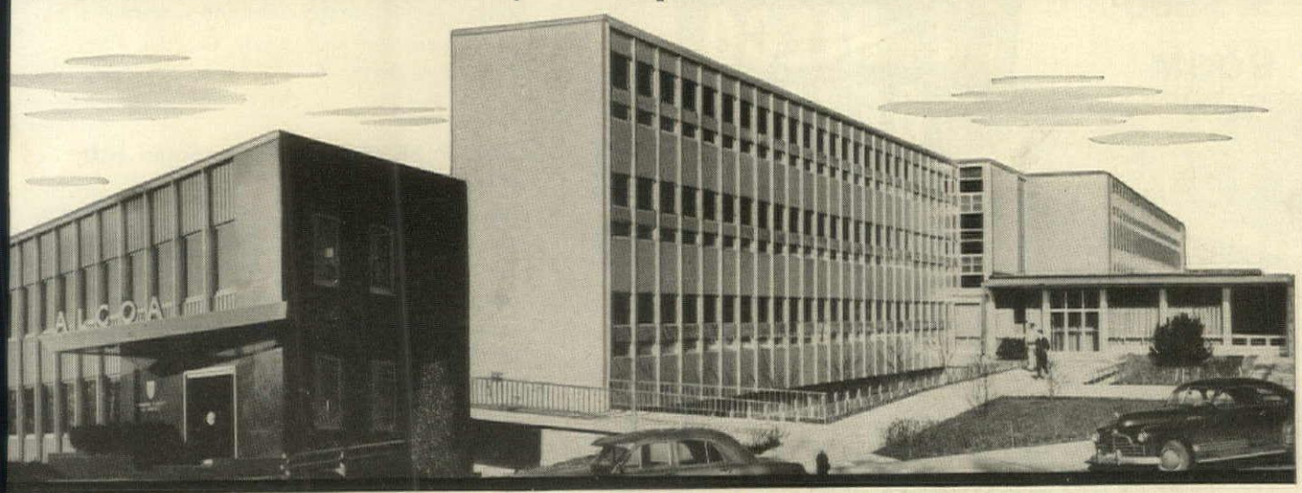
Prudential Building, Chicago, Ill.
Architect: Naess & Murphy



Fort Couch School, Allegheny County, Pa.
Architect: Button & McLean

Wyatt Building, Washington, D. C.
Architect: A. R. Clas

were erected faster, occupied earlier, and require



Alcoa Sales Office, Cincinnati, Ohio
Architect: Schell & Knabe

Carnegie Tech Donner Hall Dormitory, Pittsburgh, Pa.
Architect: Mitchell & Ritchey

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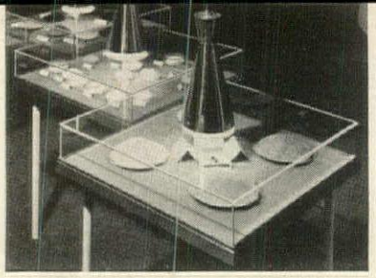
General Mitchell Field Airport Terminal, Milwaukee, Wis.
Architect: Milwaukee County Architect's Office



Details of these and other buildings where architects have exploited the outstanding advantages of aluminum are available on request. Write for your copy of *Alcoa Architectural Achievements* and see how aluminum has progressed from ornamentation and minor applications to its full stature as a primary *structural* material. Aluminum Company of America, 1887-M Alcoa Bldg., Pittsburgh 19, Pa.

PRODUCTS

Continued from p. 216







MODERN SCHOOL DESIGN SAVES $500 PER ROOM WITH RILCO BEAMS



WEBSTER GRADE SCHOOL, PELLA, IOWA

LET Gene Hurley, contractor, tell why he was "able to give the best bids" on the two schools shown here.

"Besides substantial savings in original cost," said Mr. Hurley, "Rilco beams cut our erection costs as well. The natural beauty of the wood allowed us to leave beams exposed, no furring for the ceiling was necessary; we just nailed Rilco decking directly to the top of the beams and purlins.

"We saved $500 per school room yet produced unusually attractive interior effects."

RILCO offers the architect freedom of design in a fire safe material, and the contracted low original cost plus fast, easy erection. This combination means a low cost, well designed school for you. For complete information write:



WEST SIDE GRADE SCHOOL, EAGLE GROVE, IOWA
Architects: Smith & Voorhees, Des Moines, Iowa
Contractor: Hurley Construction Co., St. Paul, Minn.

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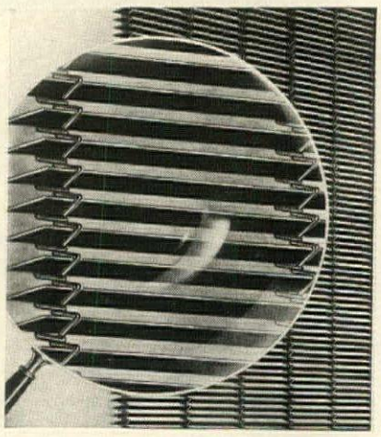
GLASS CEMENT joins window panels without metal clamps or strips

Architects who envision large expanses of glass for show windows and display cases, uninterrupted by metal clamps, stripping or dark mastics, now can specify *Sun-Seal* cement for virtually indiscernible joints between glass panels. Impervious to water, heat and cold, *Sun-Seal* is well able to absorb the movements of its glass neighbors as they expand and contract. The new cement is spatula-applied, held in place with gummed paper strips and excess removed after a few hours, leaving a shadowline 1/16" juncture. After 24 hours hardening time, the *Sun-Seal* joint is said to have nine times the binding strength of other glass cements. *Sun-Seal* is packaged in a $60 kit containing air-drying and bake-setting types for contractors and fabricators.

Manufacturer: Sun Sash Co., 38 Park Row, New York, N.Y.

SOLAR SCREENING rustproofed with plastic coating

Electrostatically sprayed with plastic, the new *type RS Koolshade* is reported to withstand corrosion nine times better than oxidized bronze, 37 times better than aluminum. Like the standard bronze *Koolshade*, the new plasticized *type RS* consists of thousands of tiny (.05" x .005") horizontal louvers set at a 17° angle and held in place by vertical rap wires. Air-

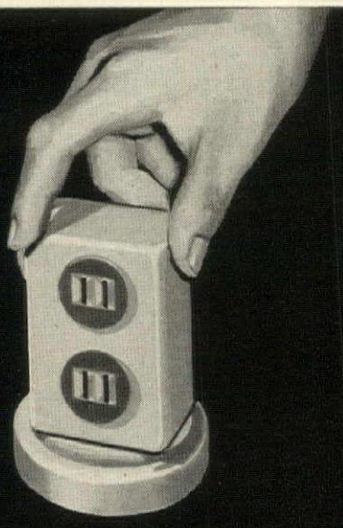


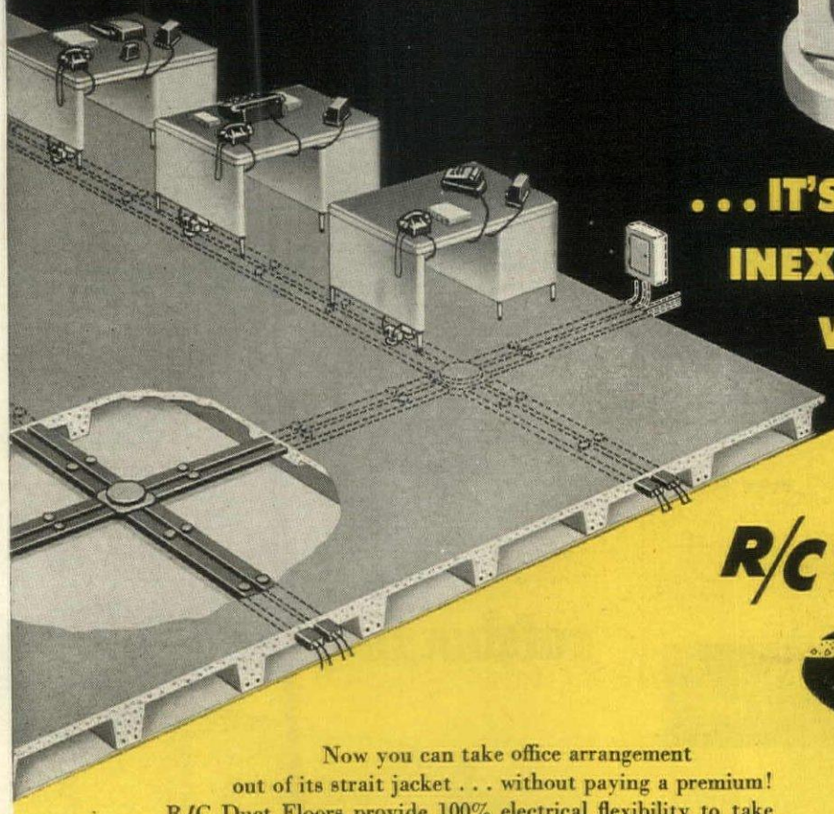
conditioning engineers have figured that *Koolshade* reduces room temperatures by as much as 15°, and have calculated that 100 sq. ft. of the solar screening can replace 1 ton of refrigeration. Tested successfully for its resistance to impact as well as to salt spray, humidity and acids, the *type RS* is priced at $1 to $2 per sq. ft., depending on kind of framing and installation—about 30% less than standard *Koolshade*. It is produced in 100' rolls in widths up to 72".

Manufacturer: Borg-Warner Corp., 310 S. Michigan Ave., Chicago, Ill.

continued on p. 224

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Ohio State Office Building, Columbus, Ohio

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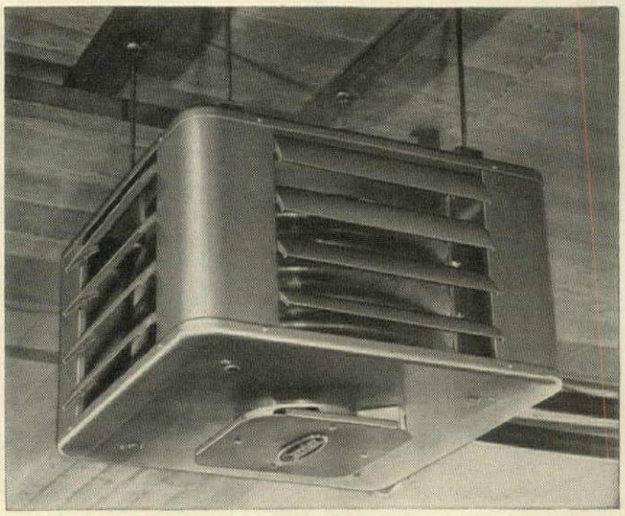
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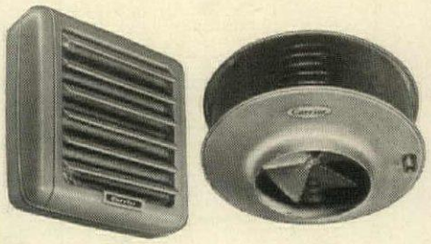
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is the answer to the problem of heating large spaces. In contrast to conventional types of unit heaters, the directional-flo unit will heat three times the same area more economically and at a lower initial cost. Fewer heating elements are required. Less piping, valves and fittings are needed. The 4-way delivers quick heat downward from any or all four sides . . . as much or as little as wanted. Eight sizes—82,000 to 590,000 Btu/hr.

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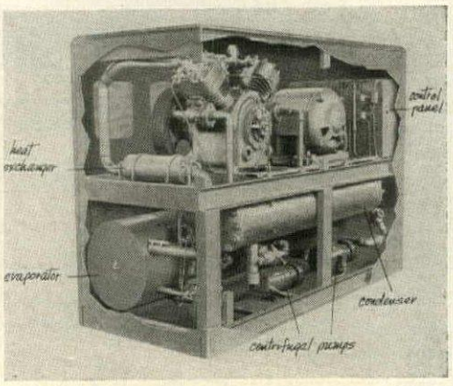
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PRODUCTS

Continued from p. 220

LIQUID CHILLER hooks up to hot water system or cools on its own

Big supplier of essential air-conditioning components to other manufacturers, Bell & Gossett have now engineered their own packaged liquid chillers using B & G pumps, compressors, heat exchangers, valves, *et al.* Produced in capacities of 7½ to 50 T., the new cooler units have been rated for a complete range of chilled water temperatures. They can be linked to forced hot water systems or installed as separate space cooling units. Models are available with special by-pass valves which permit the chiller's single pump to handle boiler water as well. In a two pump arrangement, automatic change-over can be made from winter heating to summer cooling with standard electric controls. For complete between-season comfort and efficiency, B & G recommends a three-pump system which makes use of the chiller and a tankless heater. It provides heat in cool morning hours, shuts off when temperatures are comfortable, and in the late afternoon, as the Btu's cast off by building occupants and solar heat mount, delivers controlled cool air.



Each B & G chiller is shipped complete, fully charged with freon F-12 refrigerant. Connections to power and water supply put it in service. Prices run from about $2,900 to $9,450.

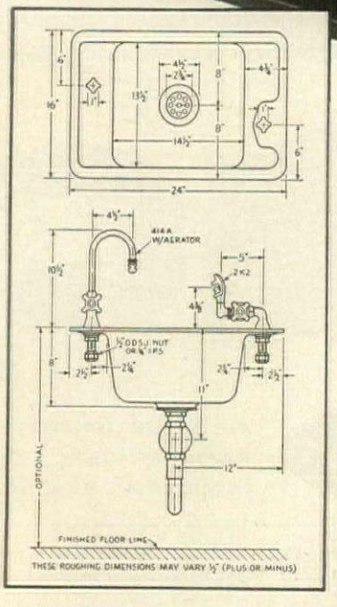
Manufacturer: Bell & Gossett Co., Morton Grove, Ill.

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TECHNICAL PUBLICATIONS

CONCRETE

Long-span Flexicore for floors and roofs. The Flexicore Co., Inc., 1932 E. Monument Ave., Dayton 1, Ohio. 8 pp.

CURBING

Steel Curbing and Landscape Border. Joseph T. Ryerson & Son, Inc., Box 8000-A, Chicago 80, Ill. 4 pp.

ELECTRICAL EQUIPMENT

ASCO Electronic Relay. Bul. 214S. Automatic Switch Co., 391 Lakeside Ave., Orange, N.J. 2 pp.

FILTERS

Get Perfect Water Clarity with Celite Filtration. Johns-Manville, 22 E. 40th St., New York 16, N.Y. 12 pp.

FIRE PROTECTION

Fire Protection Equipment for All Types of Buildings. Elkhart Brass Mfg. Co., Inc., Elkhart, Ind.

FURNITURE

Efficient Equipment for Mail and Small Materials Handling. Catalogue 55. The Federal Equipment Co., Carlisle, Pa. 8 pp.

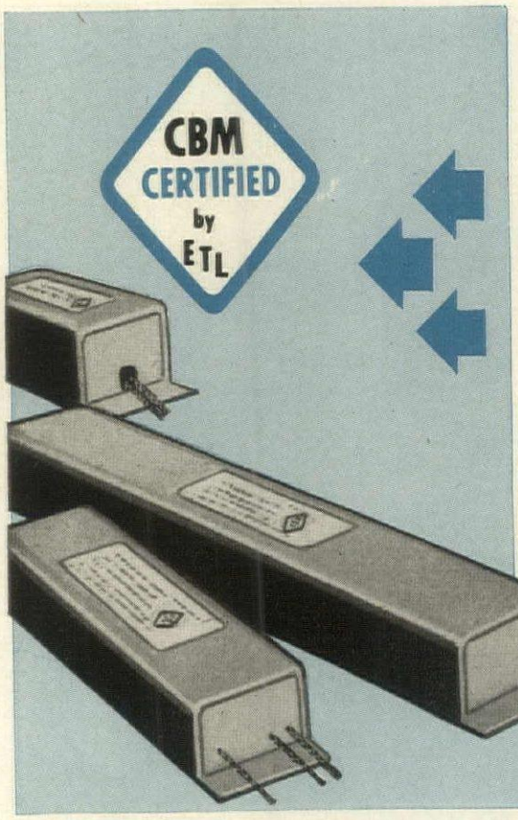
Equipment for Better Education. General School Equipment Co., 869 Hersey St., St. Paul 14, Minn.

Furniture for the Drafting Room. The Frederick Post Co., 3650 N. Avondale Ave., Chicago 18, Ill. 16 pp.

GRANITE

Standardized Granite Highway Products. Bul. 20. H. E. Fletcher Co., Inc., 104 E. 40th St., New York 16, N.Y. 22 pp.

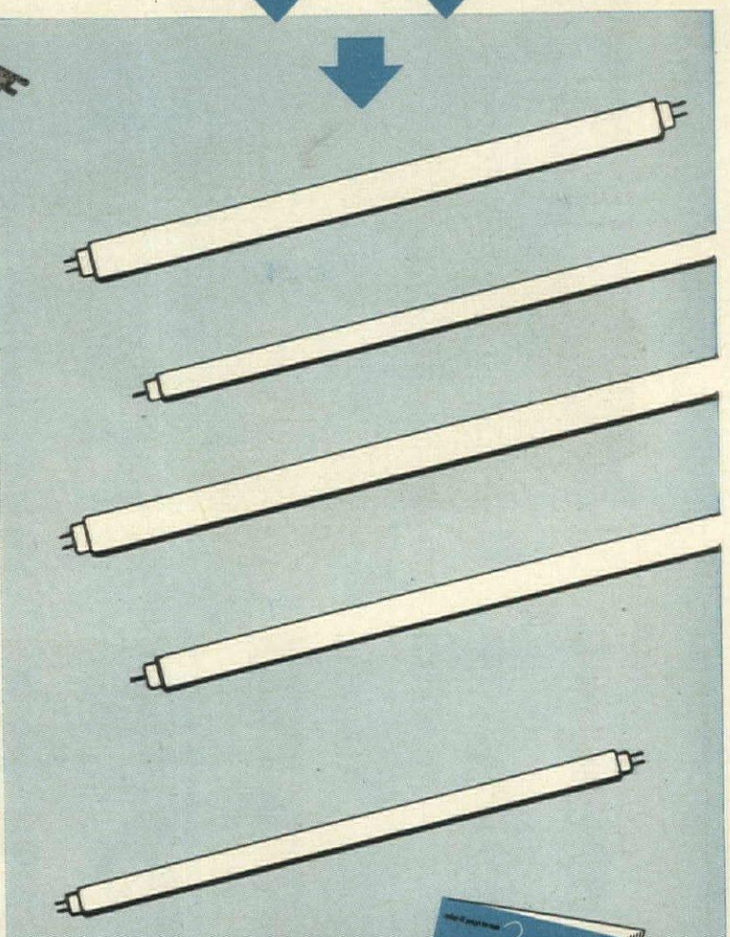
continued on p. 228



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Every type and size of fluorescent tube has its own specific electrical requirements. Thus, to get ideal performance and lighting economy, it is essential that the ballasts provide precisely the electrical needs of the tubes they operate.

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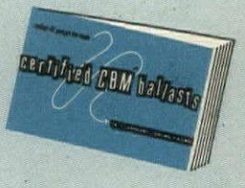
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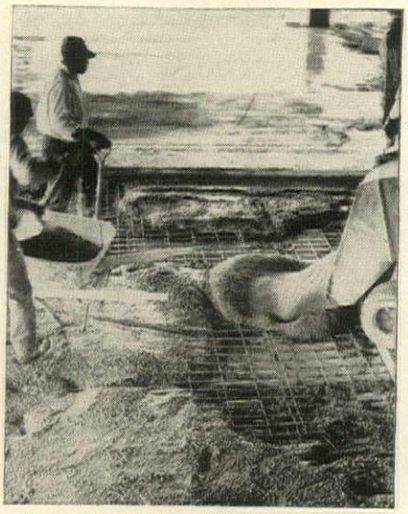
Only 18 Days From Start to Finish! Averaging 3000 sq. ft. per day, workmen spraying 3 coats of acoustical plastic on Cofar completed each floor in only 3 days—the entire job in 18 days!



Handles easily, places fast—Cofar units arrived at the job site conveniently bundled and identified for immediate placing. In 8 days, 5 workmen had placed and welded Cofar into position — ready for concrete pours several days ahead of ordinary forms.



Wood forms eliminated—Because Cofar eliminates bulky, expensive wood forms, limited storage space on the job site was used to maximum advantage. Once installed, Cofar forms a solid, safe, sheltered working deck for all trades.



1 floor every 4 days—Fast Cofar construction helped to make up 60% of an 8-week delay. Concrete pours were made in 4 days per floor, more than 50% faster than with ordinary forms. Tight laps between Cofar units kept wet concrete from leaking.



Addition to Yorktowne Hotel, York, Pa.
Architect: *Roy Stiff, St. Louis, Mo.*
Hotel Consultant: *J. G. Jackson & Associates, St. Louis, Mo.*
Contractor: *R. S. Noonan, Inc., York, Pa.*

Hotel Consultant—J. G. Jackson says: "Cofar, sprayed with acoustical plastic, cut our ceiling-floor construction cost 42¢ per sq. ft.—an amazing saving! Also, this new kind of ceiling eliminates the possibility of future damage from plumbing leakage."



Job Superintendent—Norman Babner reports: "Our limited working area was not cluttered up because Cofar eliminates wood forms. Clean-up operations were cut because concrete does not leak through tight Cofar units."

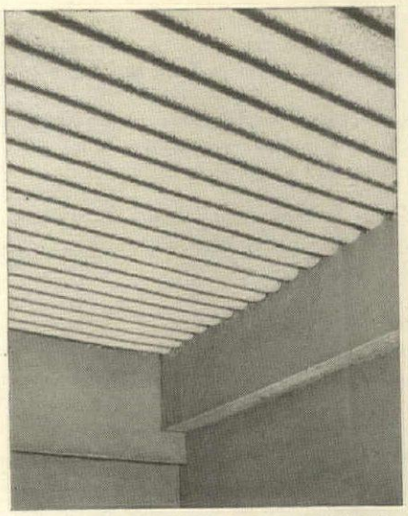


Architect—Roy Stiff says: "Thanks to Cofar, we've made a definite saving in time, money and high labor costs. The Cofar and acoustical plastic ceilings offer distinctive beauty and secure the best fire insurance rating obtainable."



Cofar® sprayed with acoustical plastic cuts ceiling-floor construction costs 42¢ per square foot!

Five men install 8 floors of Cofar in 8 days in new York, Pa., hotel addition



Firesafe and beautiful—Acoustical plastic-on-Cofar ceilings eliminate between-floor wasted areas. Exposed to direct flame for over 4 hours without igniting, acoustical plastic sprayed on Cofar rates Underwriter's Laboratories Retardant Report 3413-7.

YORK, PA.—In the 8-story addition to the Yorktowne Hotel, a new kind of ceiling made of Cofar (combined form and reinforcement) sprayed with acoustical plastic has saved almost $9500 in building costs.

Roy Stiff, architect, reports: "Cofar's attractive corrugated pattern contributes a distinctive architectural effect. By eliminating expensive suspended or conventional plastered ceilings, Cofar, sprayed with acoustical plastic, saves 12″ to 18″ in wasted ceiling height . . . saves structural materials by reducing the over-all height of the building."

Says Norman Babner, job superintendent for R. S. Noonan, Inc., York, Pa., contractors: "Cofar cost only 7¢ per sq. ft. to install because the easy-to-handle units are quickly placed and welded. Once installed, Cofar forms an immediate, sheltered work platform for electricians and plumbers. Cofar placement and concrete pours averaged 4 working days per floor. With conventional forms, the same area would take 2 weeks. And, because Cofar requires minimum support, our shoring costs were only 1½¢ per sq. ft.!"

Cofar deep-corrugated steel units save weeks of construction time, provide earlier occupancy, help make your client's building dollars go farther. For information, estimates or costs on your building project, contact home or district office, attention Dept. F-6.

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PRODUCTS

Continued from p. 224

HARDWARE

EPCO Builders Hardware Specialties. Catalogue No. 18. Engineered Products Co., P.O. Box 118, Flint 1, Mich. 8 pp.

HEATING AND AIR CONDITIONING

Cavalier Electric Heat. Cavalier Corp., Chattanooga 2, Tenn. 12 pp.

Dravo Heater Case Study 560-70. Dravo Corp., 1203 Dravo Building, Pittsburgh 22, Pa. 4 pp.

Engineers Guide to Electronic Controls for Heating, Ventilating and Air Conditioning. Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. 42 pp.

Fageol Heat Machines. Bul. LL-2220. R. D. Fageol Co., Kent, Ohio. 6 pp.

Magnetic Starters for Air Conditioning and Refrigeration. GEA-6301. General Electric Co., Schenectady 5, N.Y. 8 pp.

Perma-Fan Evaporative Condenser PF 400 Series. Drayer-Hanson Inc., 3301 Medford St., Los Angeles 63, Calif. 6 pp.

Radiant Heating and Snow Melting for Airport Installations. A. M. Byers Co., Pittsburgh, Pa. 32 pp.

Spotaire LRC. Bul. LP 5.220. Drayer-Hanson, Inc., 3301 Medford St., Los Angeles 63, Calif. 2 pp.

INSULATION

Foamglas, the Cellular Stay-dry Insulation for Piping and Equipment. Pittsburgh Corning Corp., One Gateway Center, Pittsburgh 22, Pa. 8 pp.

LANDSCAPING

Garden Ideas from California. California Redwood, Assn., 576 Sacramento St., San Francisco 11, Calif. 24 pp.

LIGHTING

C-lector—a remote control, preset switching system. Century Lighting, Inc., 521 W. 43rd St., New York 36, N.Y. 4 pp.

Display Lighting. General Lighting Co., 248 McKibbin St., Brooklyn 6, N.Y. 8 pp.

School Building or Little Red Schoolhouse. Westinghouse Electric Corp., E. Pittsburgh, Pa. 32 pp.

Theatrical, Architectural and Television Lighting. Century Lighting, Inc., 521 W. 43rd St., New York 36, N.Y. Kit includes booklets and data sheets.

METALS

Aluminum Products. Peter A. Frasse & Co., Inc., 17 Grand St., New York 13, N.Y. 6 pp.

The Fabricator's Handbook. Crucible Steel Co. of America, Henry W. Oliver Bldg., Pittsburgh 30, Pa. 164 pp.

Reynolds Architectural Aluminum Portfolio. Reynolds Metals Co., 2500 S. Third St., Louisville 1, Ky. 202 pp.

PAINTS

Architectural Specification Manual. Pratt & Lambert, Inc., 3301 38th Ave., Long Island City 1, N.Y. 223 pp.

PLASTICS

Plastics Designed for Improved Performance. Homalite Corp., 11-13 Brookside Drive, Wilmington 166, Del.

Scotchply Reinforced Plastic Reference Manual. Minnesota Mining and Mfg. Co., 900 Fauquier Ave., St. Paul 6, Minn. 20 pp.

continued on p. 234

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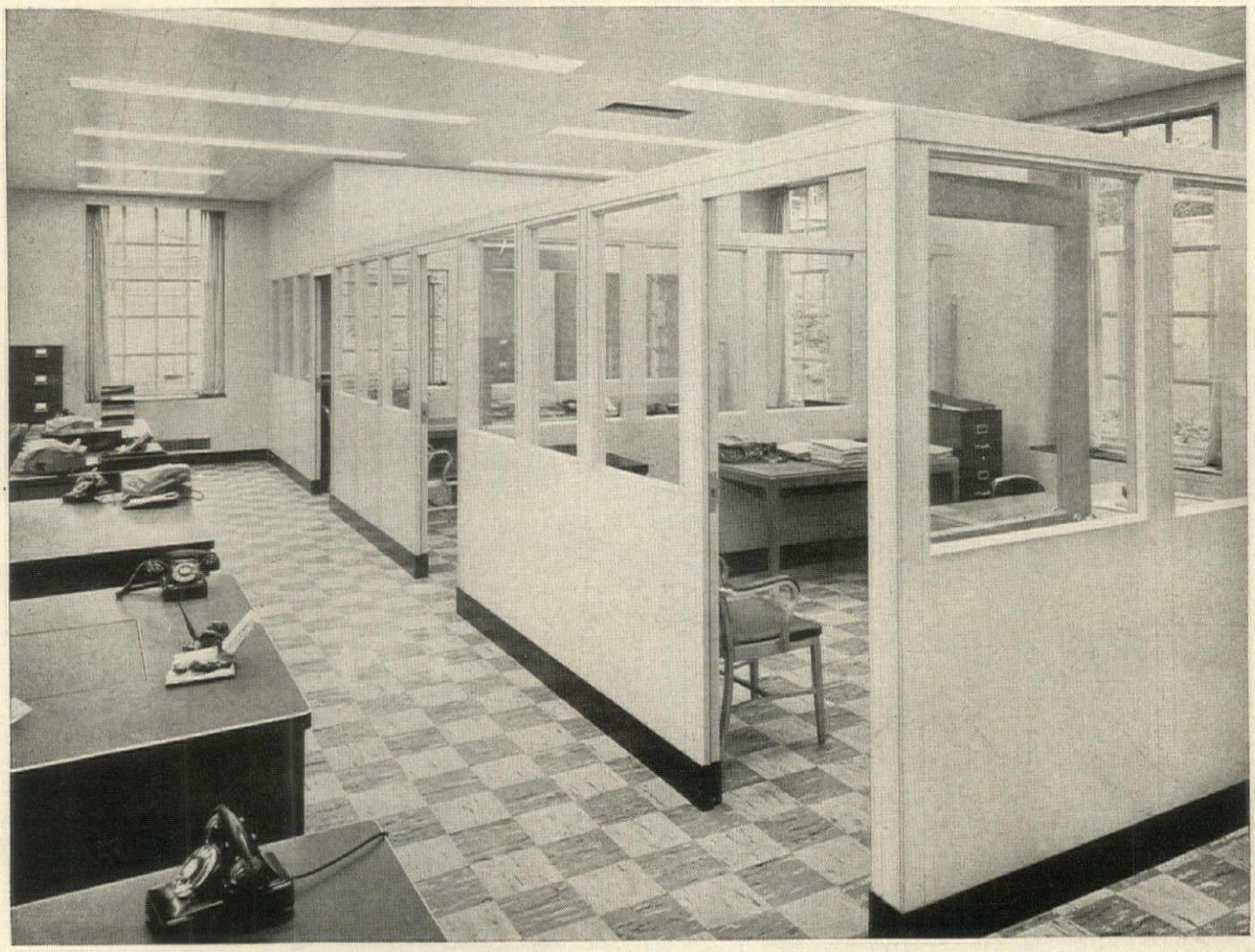
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NORTON
NON-SLIP AGGREGATE

See Sweet's File or write for your own copy of the new edition of catalog 1935-F.



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Mills Movable Walls provide space control, insure efficiency at Firemen's Mutual

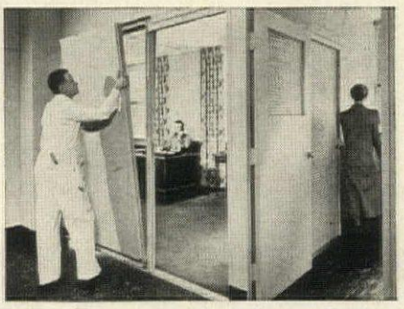
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As modern and attractive as they are efficient, Mills Walls combine this complete flexibility with distinctive architectural design and structural stability. They are thoroughly insulated and sound-proofed and provide easily accessible lay-in raceways for electrical wiring and controls.

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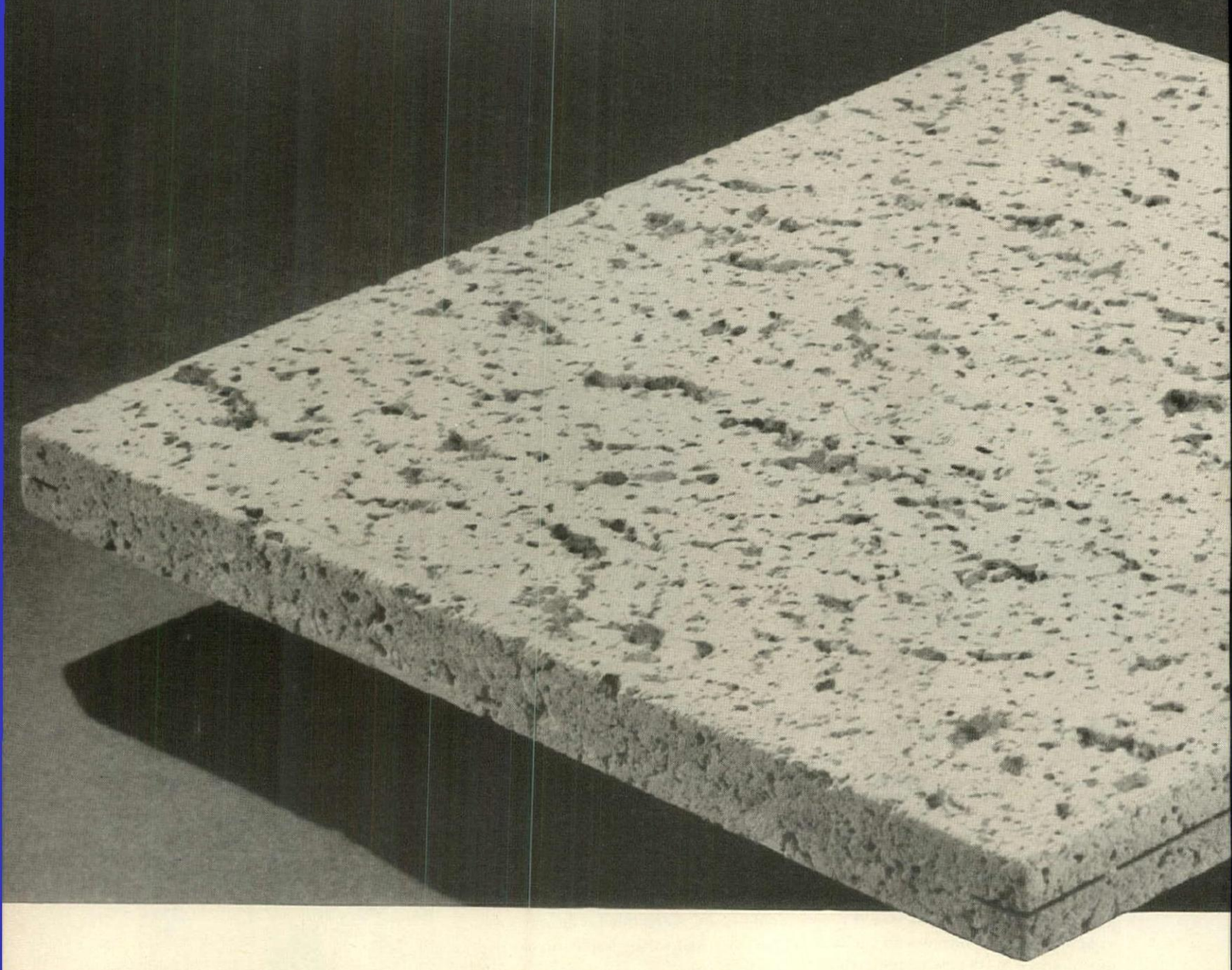
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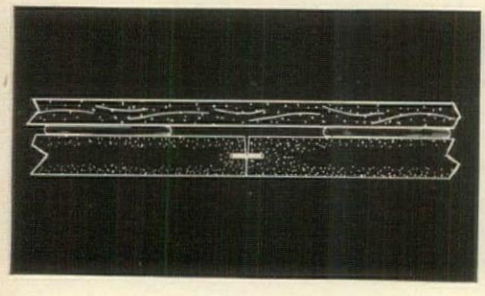
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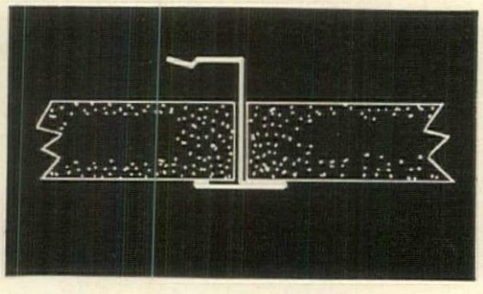
ACOUSTONE*

MINERAL ACOUSTICAL TILE

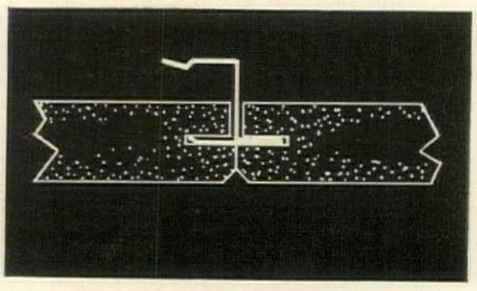




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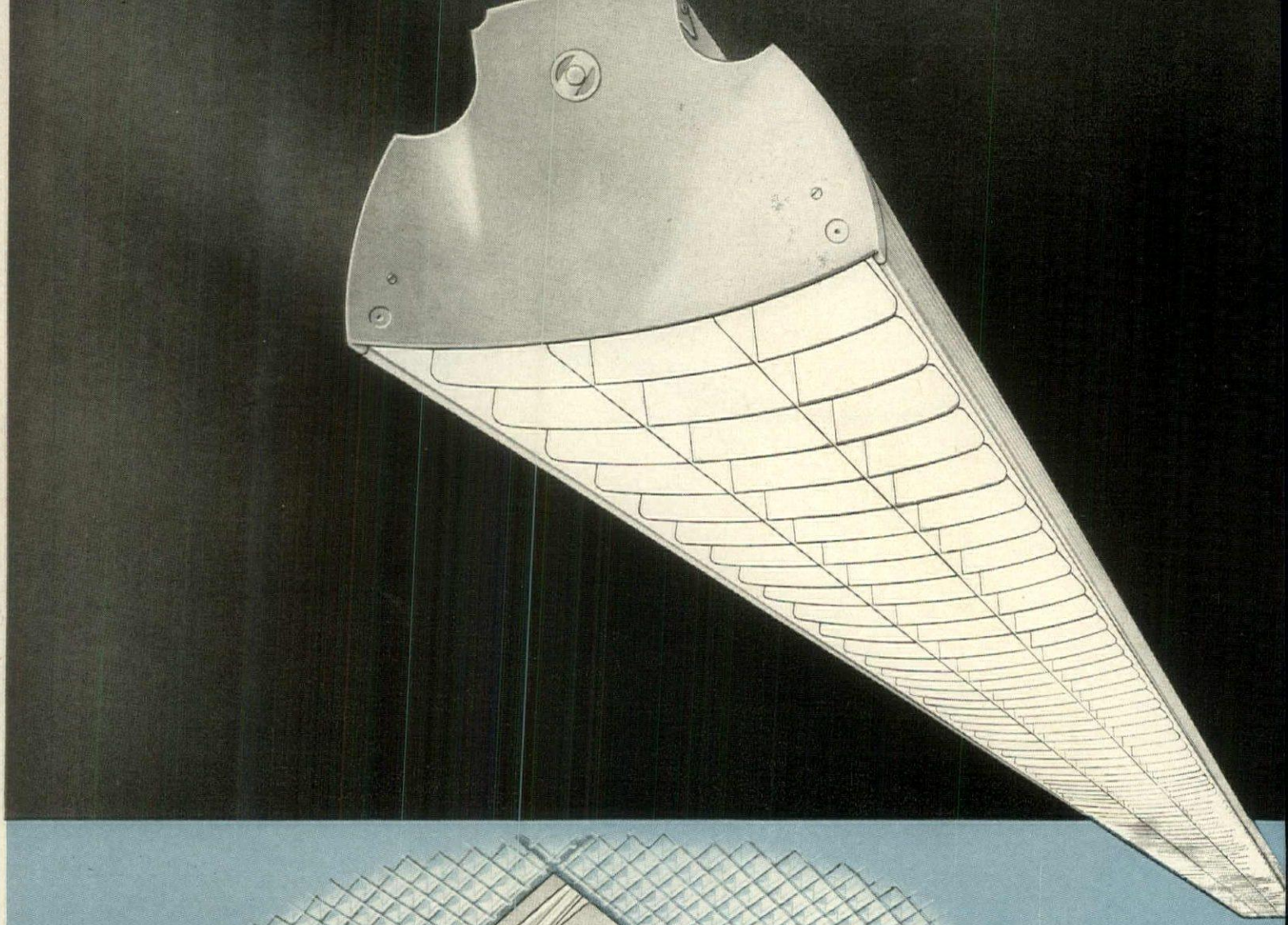
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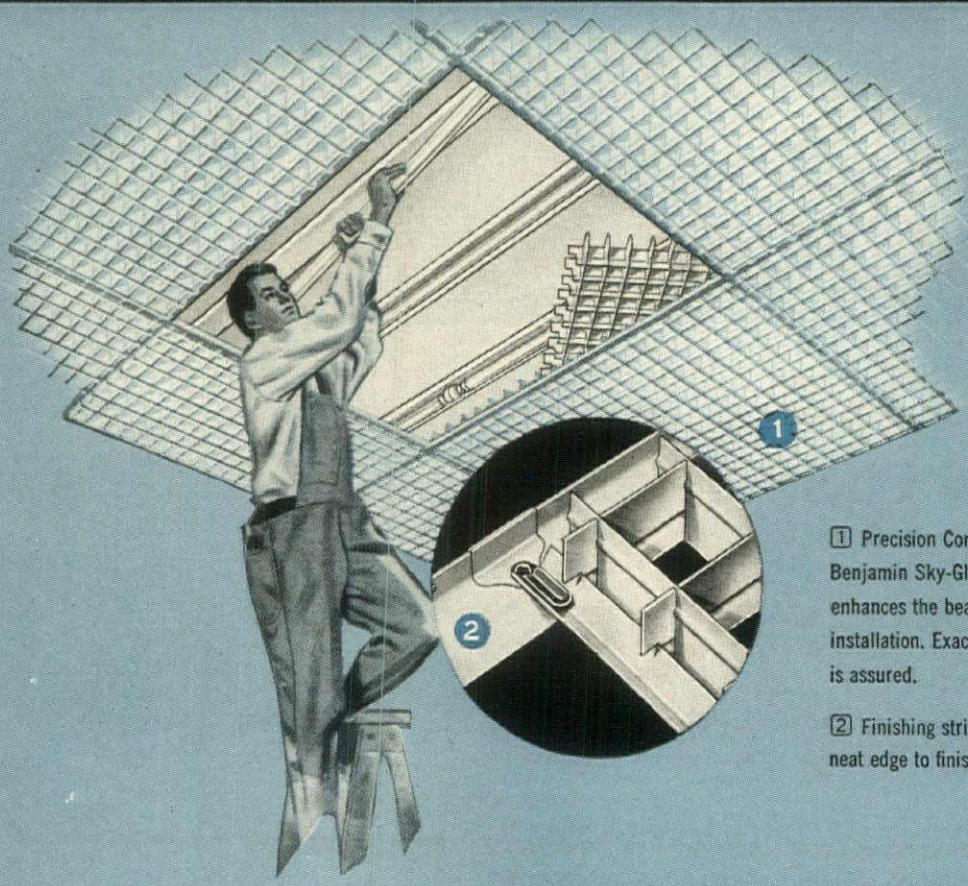
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UNITED STATES GYPSUM

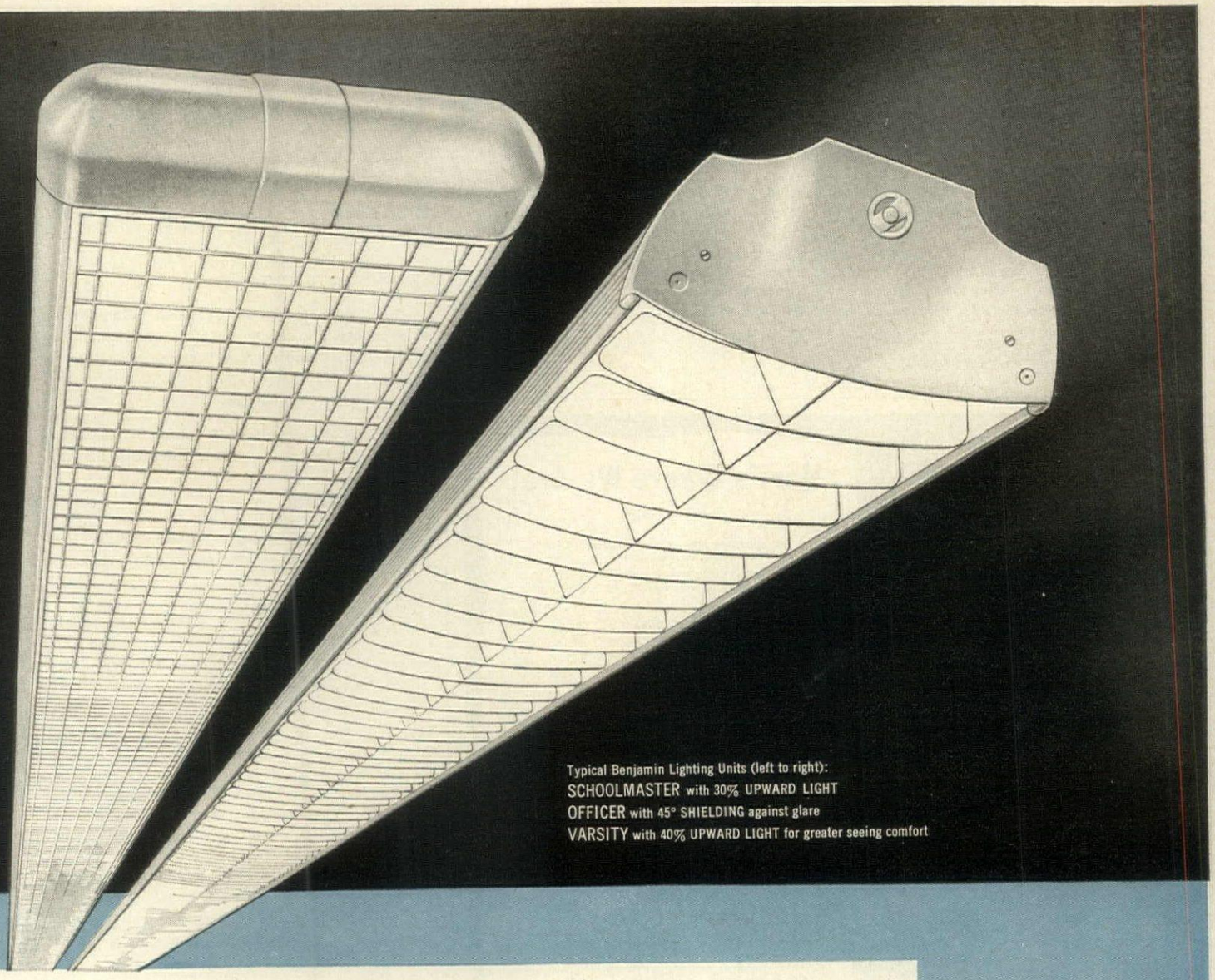
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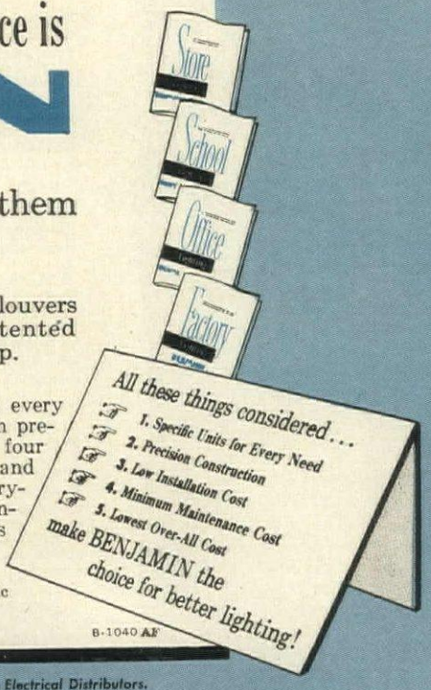
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Continued from p. 228

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Spraylat Strippable Coating. Spraylat Corp., One Park Ave., New York 16, N.Y. 4 pp.

RAILING

Aluminum Econo-Rail. Newman Brothers, Inc., 670-678 W. Fourth St., Cincinnati 3, Ohio. 8 pp.

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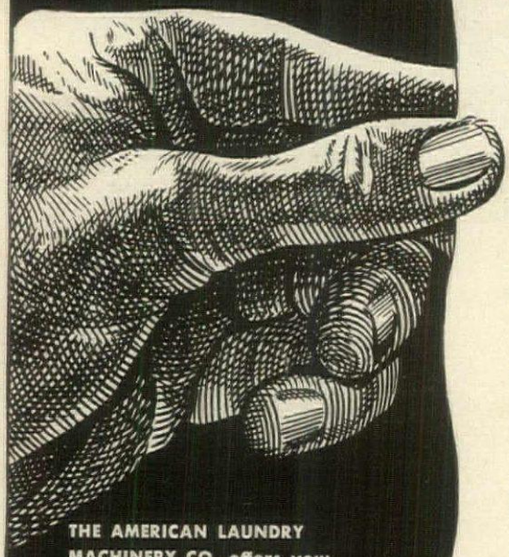
Lime Crest Roofing Spar. Limestone Products Corp. of America, Newton, N.J. 4 pp.

SCREENING

Insect Wire Screening. CS 138-55. US Government Printing Office, Washington 25, D.C. 12 pp. 10¢

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Architects Manual for Venetian Blinds. Levolor Lorentzen Inc., 720 Monroe St., Hoboken, N.J. 24 pp.

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WALL PANELS

Sketch Book No. 3 on Architectural Porcelain Enamel. The Erie Enameling Co., Erie, Pa. 12 pp.

WINDOWS AND DOORS

Arislide Aluminum and Steel Sliding Doors. Michel & Pfeffer Iron Works, Inc., 212 Shaw Road, South San Francisco, Calif. 16 pp.

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Modernaire Awning Type Convertible Wood Windows. Modernaire Corp., 8400 Kinsman Rd., Cleveland 4, Ohio. 4 pp.

Modular Dimensioned Metal Doors and Frames. United Steel Fabricator, Inc., Wooster, Ohio. 10 pp.

Rolling Cookson Doors. Bul. No. 401. Cookson Co., 1525 Cortland Ave., San Francisco 10, Calif. 12 pp.

WOOD TREATMENT AND FINISHING

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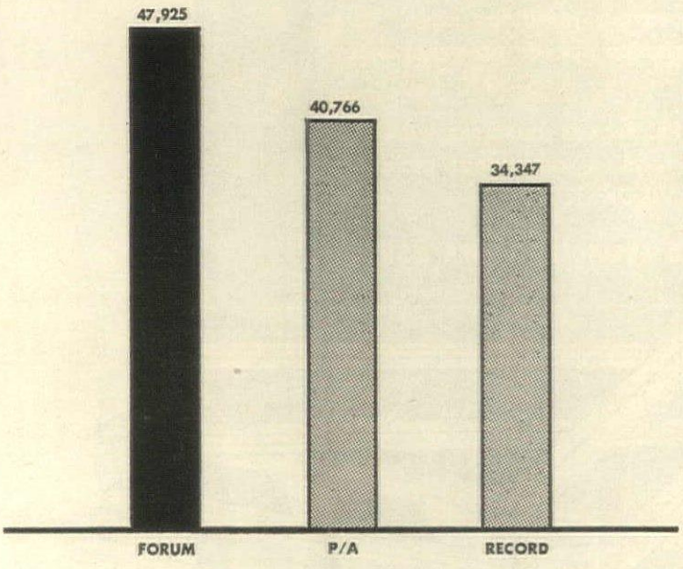
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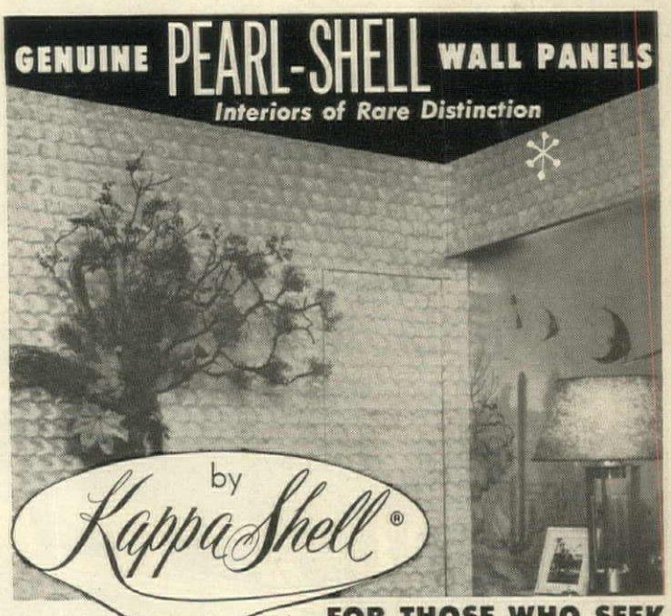


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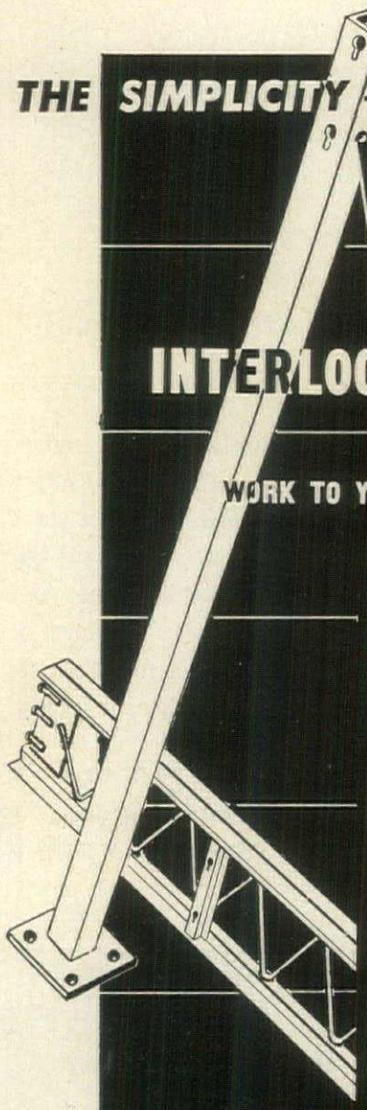
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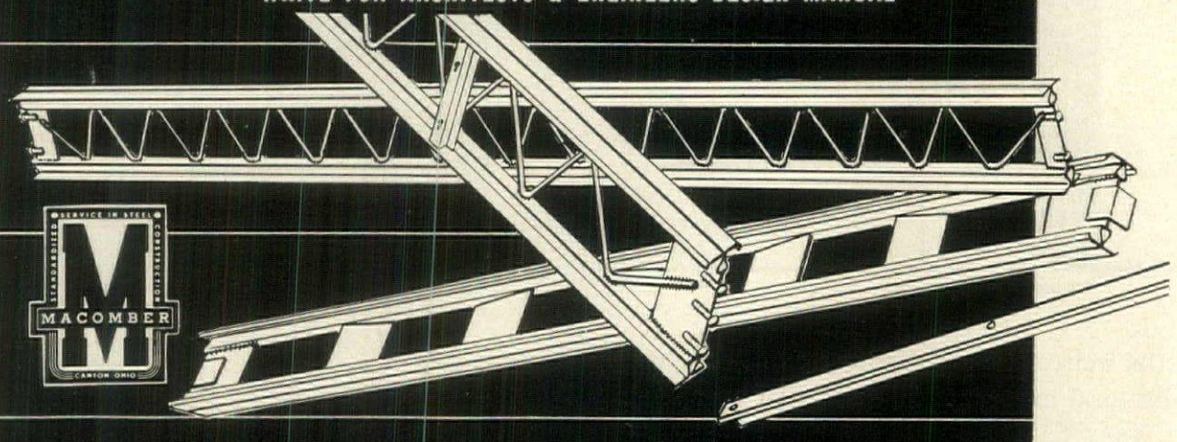
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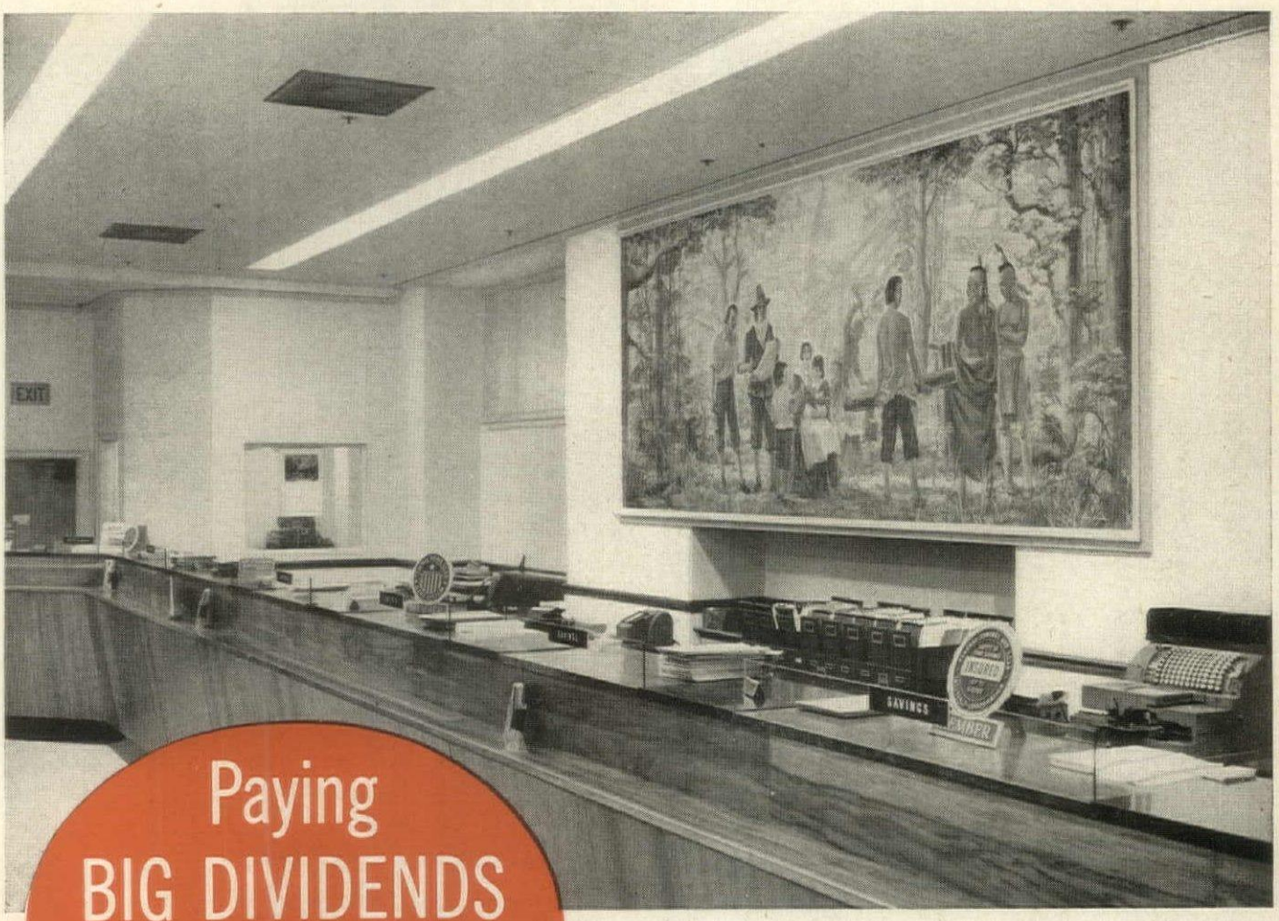
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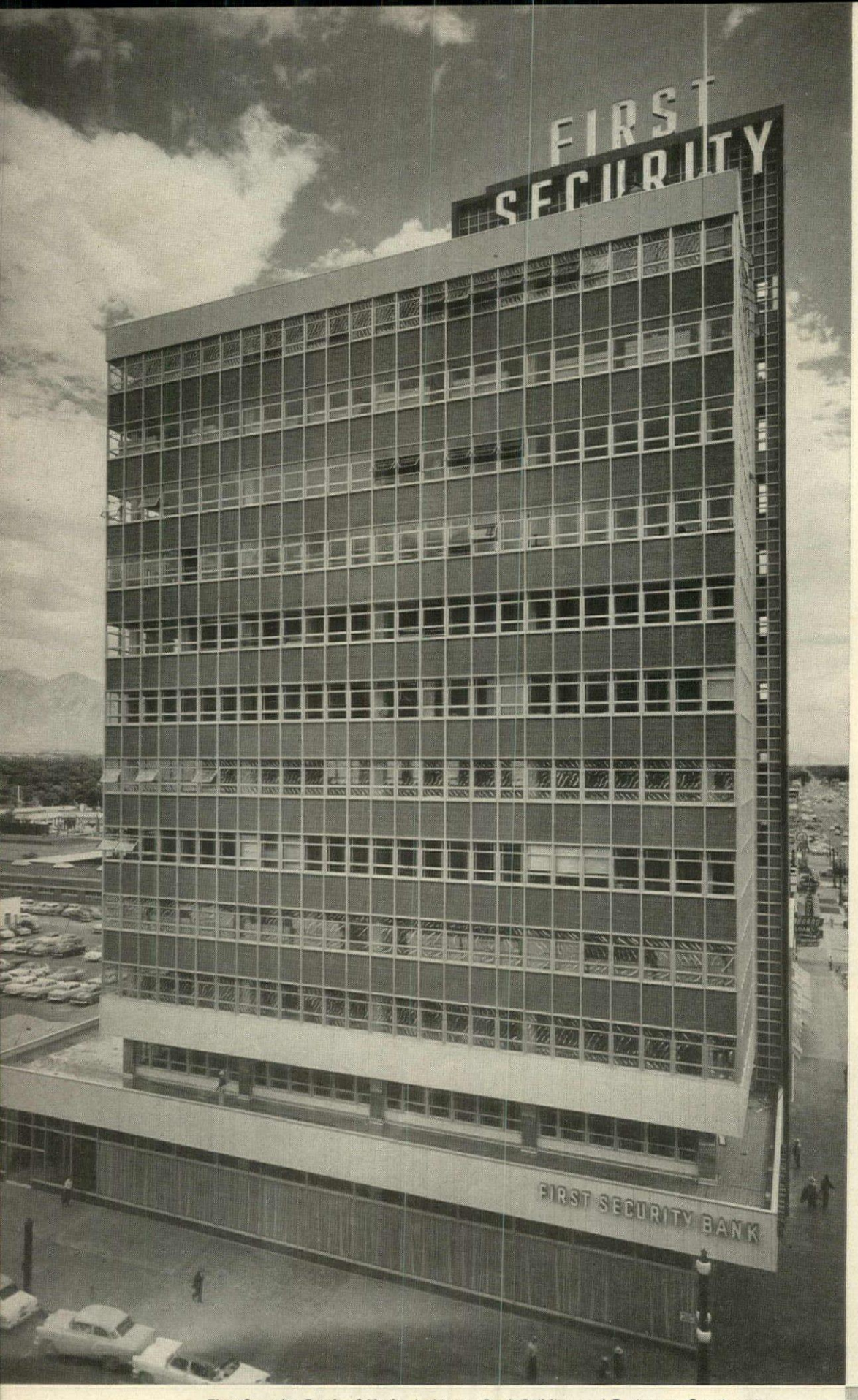
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The inviting effect of Day-Brite Mobilex units is illustrated in this section of the main banking floor.



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TO ARCHITECTS, ENGINEERS

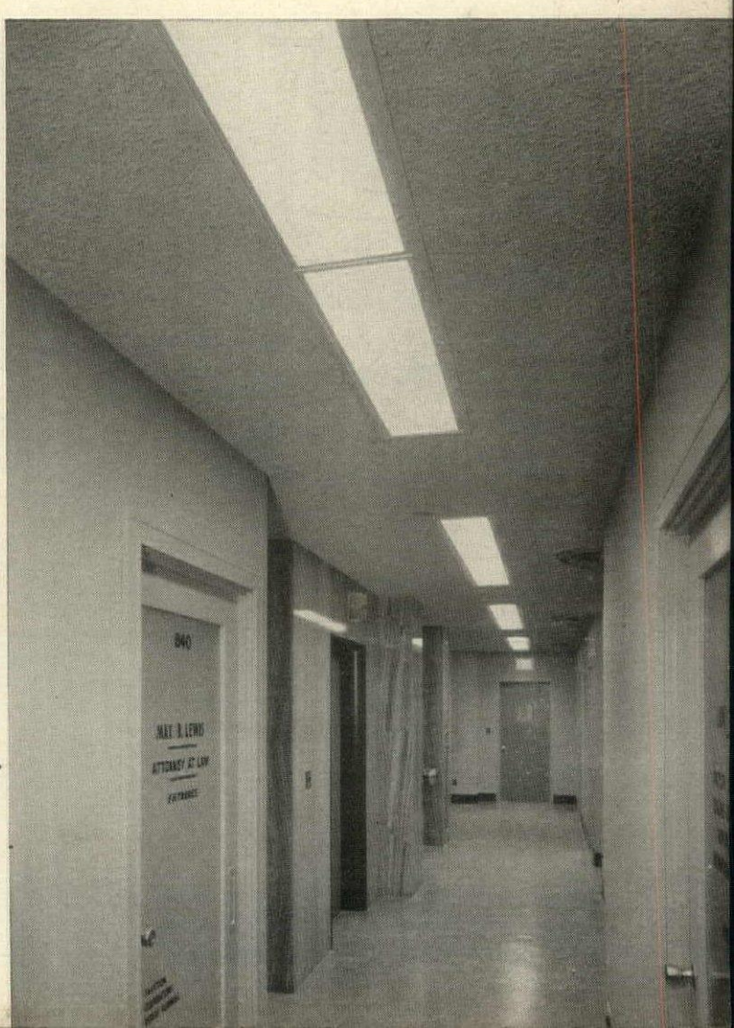
The Day-Brite "classic line of light" is complete and lends itself to any type of architectural design, treatment and type of construction.

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Corridor lighting illustrates the adaptability of Day-Brite troffers. Note Day-Brite EXIT light. ▶



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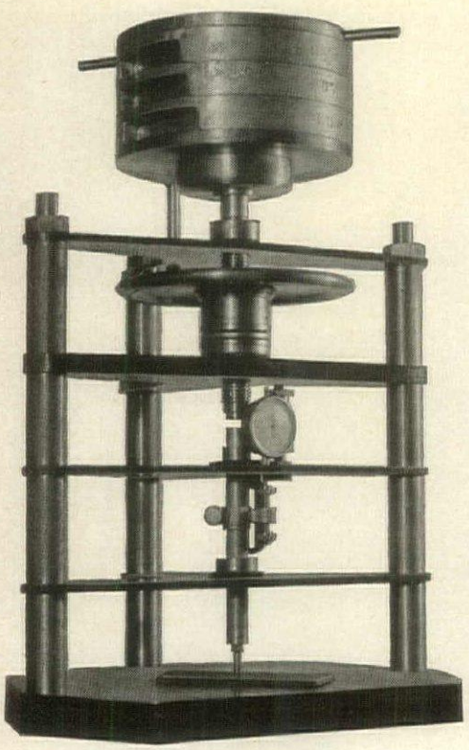
Comfort, noise, and indentation are controlled by . . .

THE RESILIENCY OF FLOORS

Technically speaking, resilience is a property involving the elastic energy inherent in a material which causes it to regain its original shape when an external load is withdrawn. For practical purposes, however, the resilience of a floor, in its broadest sense, affects more than its properties of recovery from indentation, important though these may be.

For the purposes of this article, resiliency is treated in the more comprehensive sense—as affecting underfoot comfort, and the noise generated by foot traffic, as well as the floor's resistance to or recovery from indentation by foot traffic and other short-term loads.

Recovery from indentation. In assessing the resilience of any particular flooring, the momentary indentations involved in walking are those which are of primary importance. These pressures are quite high—often as much as several thousand pounds per square inch when contact is first made with the floor under the edge of the heel. The method ordinarily used for measuring a floor's resilience is the measurement of its recovery from short-term indentations. Such measurements are of great practical assistance to architects in making their selection of floors—especially for heavy traffic areas. Because the testing requirements of Federal Specifications for different types of flooring vary, no direct numerical comparison of short-term indentation characteristics of various resilient floors can be made.



A standard instrument used to measure the recovery of resilient flooring materials from short-term indentation is the Armstrong Indentation Tester. Developed in the Armstrong Research and Development Center, this instrument is one of several types that are used in determining the data on the resilience of floors described on these pages.

Inability of a floor to recover from the indentation caused by temporary loads will also cause the floor to present an irregular and unsightly surface and to become difficult to keep clean.

RESILIENT FLOORS RATED IN ORDER OF RESILIENCE

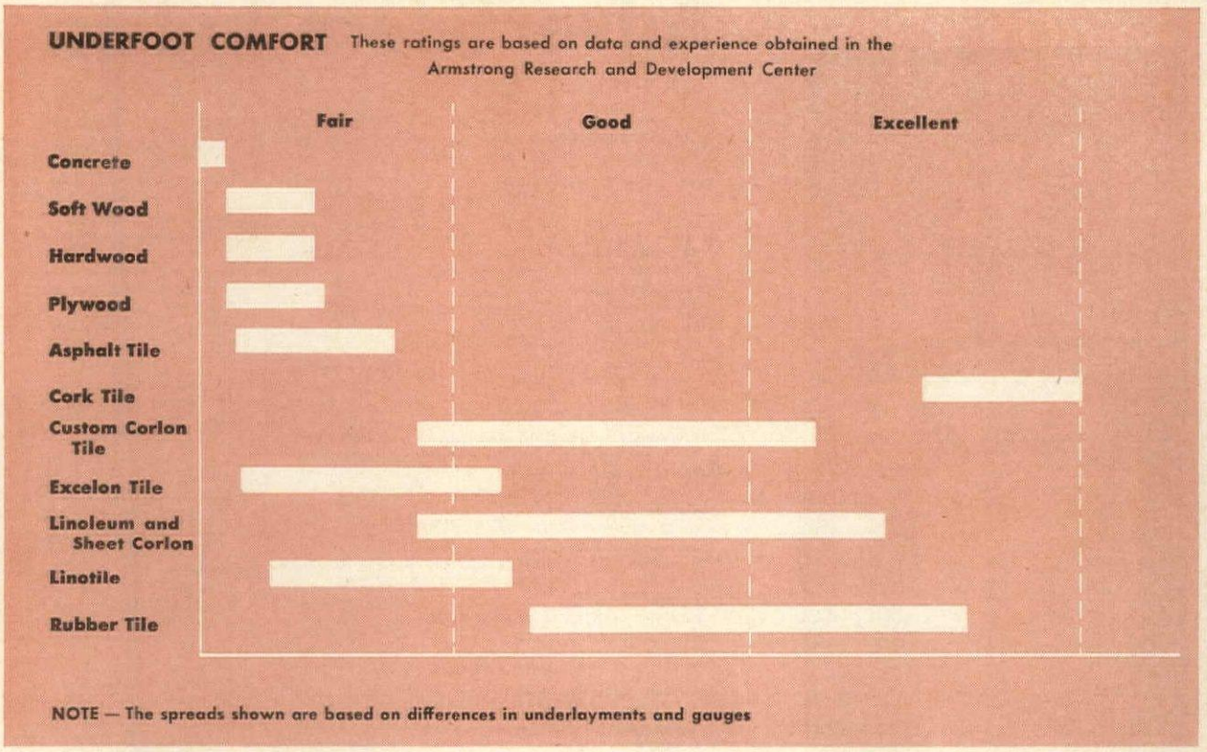
1. Cork Tile
2. Rubber Tile & Custom Corlon Tile
3. Linoleum & Sheet Corlon
4. Linotile
5. Excelon Tile
6. Asphalt Tile

MAXIMUM STATIC LOAD LIMITS FOR ARMSTRONG RESILIENT FLOORS

Type of Flooring	Load Limit Lbs. per Sq. Inch
Asphalt Tile and Excelon Tile	25
Cork Tile	40
Linoleum and Corlon (felt-back)	75
Linotile, Rubber Tile and Custom Corlon Tile	200

The table above indicates the maximum safe load limit on Armstrong Resilient Floors before the material becomes slightly indented. These figures are the results of indentation tests conducted by the Armstrong Research and Development Center and are used as a basis for computing the area of bearing surface of Armstrong Furniture Rests. These Furniture Rests and Cups are recommended to eliminate excessive indentation in resilient flooring caused by heavy static loads.

Underfoot comfort. This is an important consideration in the selection of floors in any building, and becomes a vital factor in the many areas where prolonged periods of walking or standing tend to cause fatigue. Retail stores, hospital corridors, restaurants, and cafeteria service areas are obvious examples of locations where the efficiency of personnel may be seriously affected by comfort underfoot—and where the choice of the right floor may help considerably to reduce fatigue and increase efficiency. The accompanying chart has been prepared by the Armstrong Research and Development Center for the purpose of helping architects to ascertain the relative "comfort" of all types of floors. It must be emphasized that this chart is relative rather than absolute, since underfoot comfort is affected by factors other than the composi-



tion of the floor itself—such as the underlayment and adhesive used in its installation.

Quietness. With the public more aware of the ill effects of noise than ever before, the reduction of sound from floor traffic becomes increasingly important to architects. The impact of footsteps on hard floors is a common source of annoyance—and in areas such as corridors, where the sound tends to reverberate through adjoining rooms, impact noise can be a very serious problem.

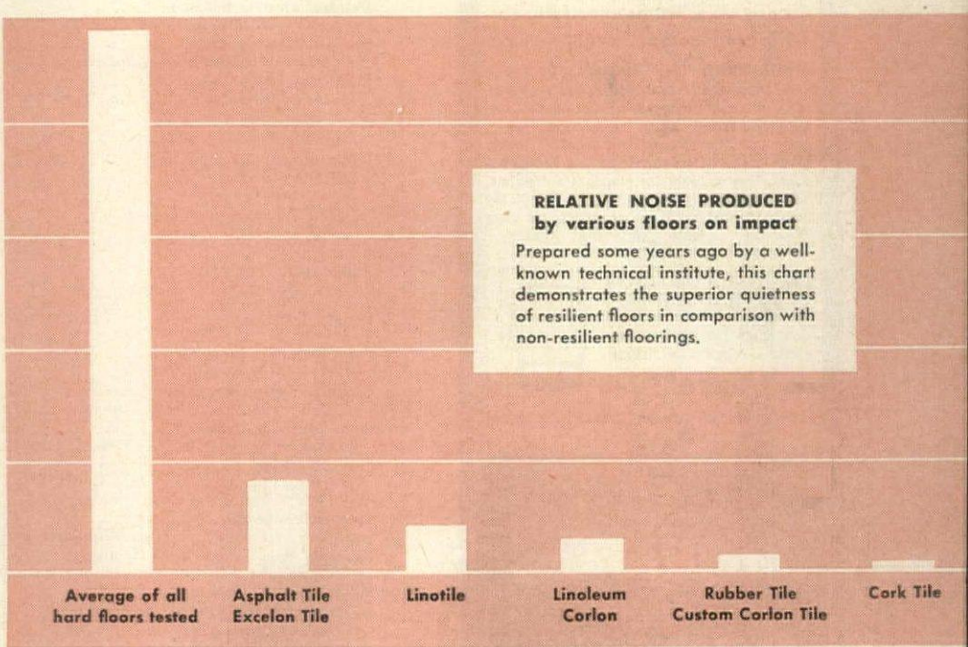
Resilient floors, because of their composition, give under the impact of footsteps, dropped objects, and rolling wheels. This cushioning effect actively reduces traffic noise. All types of resilient floors rate well as "low noise producers" in comparison with concrete or marble. Their relative noise-on-impact qualities are shown on the chart at lower right.

While resilient floors will soften the sound of foot traffic, they will not appreciably subdue noise originating from other sources. "Sound conditioning"—or the absorption of noise such as the clatter of typewriters, kitchenware, and conversation—can best be accomplished by the use of acoustical materials. Generally, the installation of neither resilient floors nor acoustical materials stops the passage of noise through the building structure itself.

ARMSTRONG CORK COMPANY makes all types of resilient floors for all types of interiors. Almost any flooring problem can be met with one or more of the floors in the Armstrong Line. As a result, we have no special bias toward any one type and can offer architects impartial recommendations on any flooring problem. Our main interest is to aid you in making a sound flooring selection.

Armstrong's sales representatives throughout the country will be glad to consult with architects and make specific recommendations for individual jobs. Your Armstrong representative has a wide variety of experience and training in resilient flooring and can also call upon the Armstrong Research and Development Center for assistance with special problems.

For helpful information on any flooring question, just call your nearest Armstrong District Office or write direct to Armstrong Cork Company, Floor Division, 112 Rooney St., Lancaster, Pa.



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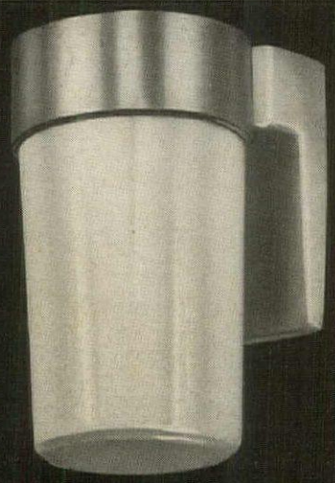
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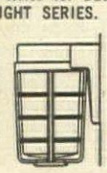
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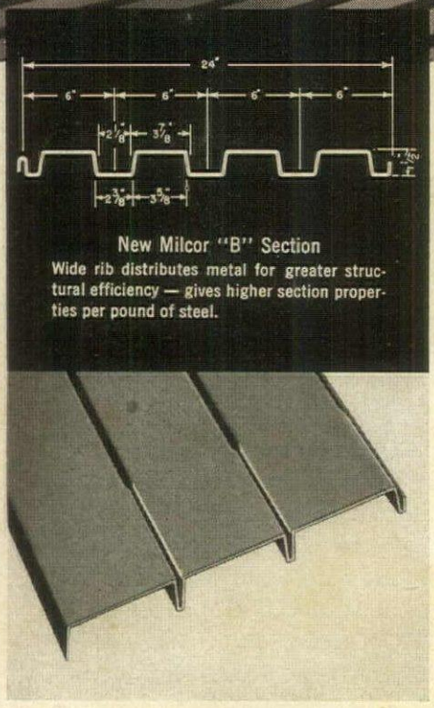
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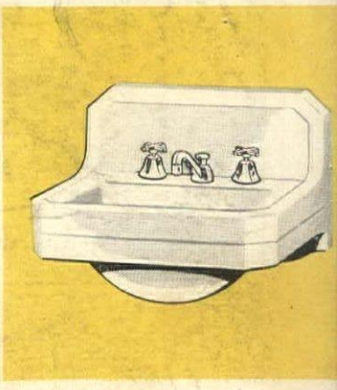
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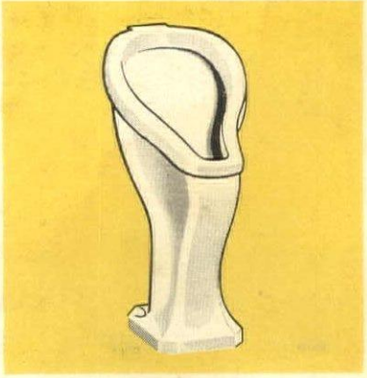
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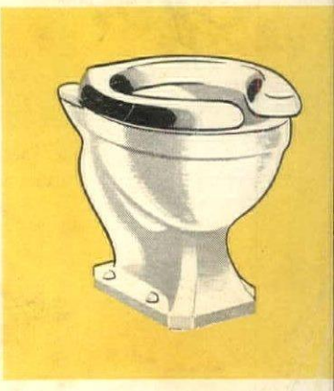
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